

THE CLEAN WATER STATE REVOLVING FUND:
HOW FEDERAL INFRASTRUCTURE INVESTMENT
CAN HELP COMMUNITIES MODERNIZE WATER
INFRASTRUCTURE AND ADDRESS AFFORD-
ABILITY CHALLENGES

(116-5)

HEARING
BEFORE THE
SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT
OF THE
COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES
ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

MARCH 7, 2019

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U.S. House of Representatives
Washington, DC 20515

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MARCH 1, 2019

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Water Resources and Environment
FROM: Staff, Subcommittee on Water Resources and Environment
RE: Subcommittee Hearing on “The Clean Water State Revolving Fund: How Federal Infrastructure Investment Can Help Communities Modernize Water Infrastructure and Address Affordability Challenges”

PURPOSE

The Subcommittee on Water Resources and Environment will meet on Thursday, March 7, 2019, at 10 a.m. in HVC 210, Capitol Visitor Center, to receive testimony related to “The Clean Water State Revolving Fund: How Federal Infrastructure Investment Can Help Communities Modernize Water Infrastructure and Address Affordability Challenges.” The purpose of this hearing is to examine the current state of our clean water systems and receive testimony on the backlog of clean water infrastructure needs and the infrastructure affordability challenges facing communities and American households. The Subcommittee will hear from representatives of urban and rural utilities, individuals impacted by inadequate clean water infrastructure and affordability challenges, and a law professor who can speak to recommendations for the EPA to address water infrastructure needs in environmental justice communities.

BACKGROUND

CLEAN WATER INFRASTRUCTURE NEEDS

America’s water infrastructure is in need of further financial investment. According to the American Society of Civil Engineers *2017 Infrastructure Report Card*, America’s wastewater treatment infrastructure receives a grade of D+, which is only a slight improvement from its previous grade of D in the 2013 Report Card.

According to the Environmental Protection Agency, communities need at least \$271 billion of investment over the next 20 years¹ to bring their systems to a state of good repair. Given the current level of Federal investment to address these needs, States and local governments are covering more than 95 percent of the cost of clean water projects.²

These statistics indicate a need for increased investment in our Nation’s water infrastructure, and the benefits are numerous. Investing in clean water creates thousands of domestic jobs in the construction industry and reduces the overall costs of operating and maintaining that infrastructure. According to the National Utility Contractors Association, every \$1 billion invested in our Nation’s water infrastructure creates or sustains nearly 27,000 jobs in communities across America, while improving public health and the environment at the same time.³ In addition, clean water infrastructure helps prevent contamination of our nation’s waters that are relied upon by the recreational industry. People spend approximately \$70 billion per

¹ <https://www.epa.gov/cwns/clean-watersheds-needs-survey-cwns-2012-report-and-data>.

² Congressional Budget Office. Public Spending on Transportation and Water Infrastructure, 1956 to 2017. October 2018. <https://www.cbo.gov/publication/54539>.

³ Clean Water Council: Sudden Impact: An Assessment of Short-Term Economic Impacts of Water and Wastewater Construction Projects in the United States (June, 2009).

year on recreational boating and fishing; that industry employs more than 150,000 people.⁴

CLEAN WATER ACT AFFORDABILITY

Communities and governments at all levels face growing challenges in effectively managing the water resources necessary to support growing and shifting populations, thriving residential, commercial, industrial, and agricultural sectors, and healthy and productive natural environments. Many local governments also face complex affordability challenges—with some communities addressing shrinking rate bases, while others with growing populations facing increasing segments of their rate base that are unable to afford the rising costs of clean water. In short, local infrastructure needs can disproportionately impact the poorest segments of communities across the country. Nationwide, water utilities and communities, of all sizes, seek to ensure clean, safe, accessible, and affordable water, all the while dealing with the challenges of extreme weather events and mounting concerns regarding water quality and quantity.

In 2017, the National Academy of Public Administration, issued a report that examined the challenges local communities face in providing clean, safe, and affordable water and wastewater services.⁵ This report concluded that the governmental responsibility to assure clean water that is also affordable to both communities and individuals has become an increasing challenge.

First, the report recognized that water infrastructure in the United States is aging, imposing additional costs on communities to both upgrade and maintain deteriorating infrastructure from deferred maintenance. Second, the report recognized the costs to communities to come into compliance with the Clean Water Act as an additional factor, and highlighted the importance of more cost-effective and innovative solutions, such as increased use of green-infrastructure approaches, stormwater recapture and reuse, and integrated planning, to address these challenges. Finally, the report highlighted how affordability is an especially critical issue for low-income customers throughout the United States, noting that, while average annual expenditures for water are generally low relative to other utilities, they represent a higher share of income for those with the lowest 20 percent of income.

In the 115th Congress, Congress approved two bills to address some of the challenges highlighted in the NAPA report. First, Congress approved the America's Water Infrastructure Act of 2018 (Pub. L. 115–270), which, among other things, expanded the eligibility for Clean Water Act grants to address sewer overflows and to capture, treat, and reuse wastewater and stormwater runoff. In addition, Congress passed the Water Infrastructure Improvement Act (Pub. L. 115–436), which codified the “integrated planning” concept that helps communities by providing them greater flexibility in meeting their requirements under the Clean Water Act while maintaining their obligation to achieve improvements in local water quality, as well as incorporated the use of green-infrastructure approaches into the permitting and enforcement provisions of the Clean Water Act.

In addition, legislation was introduced in both in the House⁶ and the Senate⁷ to amend the Clean Water Act to address the issue of water affordability at the household level; however, no additional action was taken on these bills.

FEDERAL CLEAN WATER INVESTMENT: CLEAN WATER STATE REVOLVING FUND

For close to 80 years, Congress has provided Federal funds to municipalities to address local water quality challenges, including sewage treatment needs. Initially, this assistance was provided as direct grants to municipalities (covering 55 to 75 percent of the total costs of the projects). However, in 1987, Congress converted the direct grant program to a Clean Water State Revolving Fund (“Clean Water SRF”) authority that provides funding directly to States which, in-turn, provide below-market rate loans to communities to finance local wastewater infrastructure needs (required to be fully repaid over a 30-year term).

The authorization of appropriations for the Clean Water SRF expired after 1994. Yet, Congress continues to fund this critical investment in our Nation's wastewater infrastructure through annual appropriations bills—providing more than \$43 billion

⁴ EPA 2012. The importance of Water to the US Economy, Part 1: Background Report. Office of Water, US Environmental Protection Agency. September 2012.

⁵ National Academy of Public Administration. Developing a New Framework for Community Affordability of Clean Water Services. October 2017. <https://www.napawash.org/studies/academy-studies/developing-a-new-framework-for-community-affordability-of-clean-water-servi>.

⁶ H.R. 2328, the Low-Income Sewer and Water Assistance Program Act of 2017 (115th Congress).

⁷ S. 3564, the Low-Income Water Customer Assistance Programs Act of 2018 (115th Congress).

in Federal capitalization assistance to States since 1987—including an appropriation of \$1.694 billion for the Clean Water SRF in the fiscal year 2019 appropriations bill (Pub. L. 116–6). In turn, this infusion of Federal capital to State revolving funds has leveraged over \$120 billion in direct assistance to communities over this period.

In 2014, Congress enacted amendments to the Clean Water Act which authorized States that provide assistance to communities under the Clean Water SRF program, to provide additional subsidization, including forgiveness of principal and negative interest loans to benefit a municipality that meets the affordability criteria of the State; or that seeks additional subsidization to benefit individual ratepayers in the municipality's residential user rate class that will experience a significant hardship from the increase in rates necessary to finance the project or activity for which assistance is sought.⁸ In addition, in recent years, the annual appropriations bill for the U.S. Environmental Protection Agency has enacted additional provisions to require States to use a portion of Clean Water SRF funding to provide communities with “additional subsidy to eligible recipients in the form of forgiveness of principal, negative interest loans, or grants” as well as to reserve an additional portion of Clean Water SRF funding for “projects to address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities.”⁹

Over the past few Congresses, legislation has been introduced to reauthorize and increase the authorized level of Federal appropriations for the Clean Water SRF program, as well as address the cost of wastewater service to low-income customers and households. Reauthorization of the Clean Water SRF program would provide Congress with the ability to establish Federal appropriations targets commensurate with local water infrastructure needs.

The Committee could examine whether additional changes to the Clean Water SRF program are warranted, including whether to permanently incorporate into the Clean Water Act green infrastructure and additional subsidization provisions like those included in the recent appropriations bills for the U.S. Environmental Protection Agency.

In January 2019, a coalition of 91 utility, engineering, contractors, and conservation groups cosigned a letter¹⁰ to Congress urging that water infrastructure be included as part of any infrastructure package approved in the 116th Congress.

WITNESSES

- Mayor David A. Condon, city of Spokane, Washington, *on behalf of the United States Conference of Mayors*
- Mr. John Mokszycki, Water and Sewer Superintendent, Town of Greenport, New York, *on behalf of the National Rural Water Association*
- Ms. Catherine Flowers, Rural Development Manager, The Equal Justice Initiative, Montgomery, Alabama
- Ms. Maureen Taylor, State Chairperson, Michigan Welfare Rights Organization, Detroit, Michigan
- Mr. Andrew Kricun, P.E., BCEE, Executive Director/Chief Engineer, Camden County Municipal Utilities Authority, Camden, New Jersey, *on behalf of the National Association of Clean Water Agencies*
- Professor Jill Heaps, Assistant Professor of Law, Vermont Law School, Burlington, Vermont

⁸Section 5003 of Pub. L. 113–121.

⁹The fiscal year 2019 appropriations bill requires States to utilize 10 percent of their Clean Water SRF capitalization grant for this subsidy/grant component, and 10 percent of their capitalization grant for green infrastructure and water and energy efficiency projects.

¹⁰<https://www.wef.org/globalassets/assets-wef/5—advocacy/legislation-and-regulation/legislative-and-regulatory-affairs/water-sector-letter-to-congress-on-infastructrure-package-jan2019.pdf>.

**THE CLEAN WATER STATE REVOLVING FUND:
HOW FEDERAL INFRASTRUCTURE INVEST-
MENT CAN HELP COMMUNITIES MOD-
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DRESS AFFORDABILITY CHALLENGES**

THURSDAY, MARCH 7, 2019

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES AND
ENVIRONMENT,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room JVC-210, the Capitol, Hon. Grace F. Napolitano (Chair of the subcommittee) presiding.

Mrs. NAPOLITANO. Good morning, everybody. Welcome to the first meeting of the Subcommittee on Water Resources and Environment for the 116th Congress. I call this hearing to order.

Today's hearing focuses on the tremendous clean water infrastructure needs facing our country, and on the challenges facing both our communities, large and small, urban, rural and Tribal, as well as our American families, in addressing these needs.

It is a privilege to serve as the chairwoman of this subcommittee, and I am pleased to be joined by my colleague and the ranking member, Mr. Westerman of Hot Springs, Arkansas. We had a nice meeting, a very comfortable meeting a couple of weeks ago, and I look forward to his input and working with him this Congress.

Mr. WESTERMAN. Thank you.

Mrs. NAPOLITANO. I also welcome new Members to the subcommittee: Representative Debbie Mucarsel-Powell of Florida; Representative Salud Carbajal of California; Representative Adriano Espaillat of New York; Representative Lizzie Fletcher of Texas; Representative Abby Finkenauer of Iowa; Representative Antonio Delgado of New York; Representative Chris Pappas of New Hampshire; Representative Angie Craig of Minnesota; Representative Harley Rouda of California; Representative Stephen Lynch of Massachusetts; Representative Tom Malinowski of New Jersey; Representative Gary J. Palmer of Alabama; and Representative Jenniffer González-Colón of Puerto Rico.

Welcome, everybody.

This subcommittee will have a very busy agenda in the coming Congress, and I pledge to do my very best to run the committee with fairness, with mutual respect for every Member consistent with the longstanding, bipartisan successes of this committee.

We have an ambitious agenda, but achievable, for this Congress. We will seek to find a legislative mechanism to ensure that all collections for harbor maintenance fund are spent annually.

We will hold hearings on WRDA 2018 implementation and lay the groundwork for enactment of a new WRDA bill in 2020. As part of these discussions, we will look at ways to make our communities more resilient by learning about how we can use natural infrastructure, water recycling, and other tools.

And I ask everybody to please provide comments and input so that we can work on a new WRDA and have it be more effective.

We will strive to enact a bipartisan water infrastructure financing bill that not only reauthorizes the Clean Water State Revolving Fund (SRF), but also seeks to assure and address the affordability challenges facing all of our communities.

Finally, we will renew our constitutional obligation to exercise congressional oversight over implementation of laws within our subcommittee's jurisdiction.

We will start with now the opening of the hearing,

To the topic of this hearing, the Clean Water State Revolving Fund, how Federal infrastructure investment can help communities modernize water infrastructure and address affordability challenges.

Today, our Nation's network of sewers, stormwater conveyances, treatment facilities are all aging, often outdated, and, in many places, not meeting the standards and the needs of our communities or water quality needs.

The American Society of Civil Engineers recently gave America's wastewater infrastructure a grade of a D-plus, up from a D, in its 2017 Infrastructure Report Card. According to the Environmental Protection Agency, communities report a need of almost \$300 billion of investment over the next 20 years to bring their wastewater treatment systems to a state of good repair.

Yet these statistics only tell half of the story. As noted by our witnesses here today, many communities also face the challenge of ensuring that water and sewer utilities remain affordable to those living in those communities.

As communities of all sizes seek to continually improve the quality, safety, and reliability of their water utilities, they often struggle to also address challenges of declining rate bases, lower income households, and other competing local needs.

All of these factors and many more compel us to find ways to make sure that water quality improvements are made more affordable to our communities.

Congress has already taken significant steps to meet this challenge. Through enactment of integrated planning legislation, thank you, and the promotion of nature-based or green infrastructure alternatives to address planning local water quality challenges, we have provided tools to communities to develop more cost-effective, long-term plans to meeting local water quality challenges.

We also need to make sure that we look at low-income communities and how they can be part of this, too.

More needs to be done. We have to find ways to make sure the cost of Federal financing is affordable for all communities.

One significant step that is long overdue is to reauthorize the Clean Water State Revolving Fund, a goal that has eluded Congress for almost 30 years.

As witnesses note, this program is universal and very important to provide affordable financing to urban and rural communities alike, and its successes are typically limited only by a lack of available resources.

On Tuesday, I was pleased to join Chairman DeFazio, Congressman Don Young, and Congressman John Katko in introducing H.R. 1497, the Water Quality Protection and Job Creation Act of 2019, to reauthorize the Clean Water State Revolving Fund, and I urge all of our Members to support this legislation, and our efforts to address local water quality challenges.

I ask unanimous consent to include this in the record.

Does anybody have any objections?

[No response.]

Mrs. NAPOLITANO. So ordered.

[The information follows:]

H.R. 1497, Submitted for the Record by Mrs. Napolitano

H.R. 1497, WATER QUALITY PROTECTION AND JOB CREATION ACT OF 2019

Available at: <https://www.congress.gov/bill/116th-congress/house-bill/1497/text>

Mrs. NAPOLITANO. However, for those communities where a State Revolving Fund loan is still not enough to address local affordability needs, we need to ensure other tools are available. We need to fund targeted clean water grants, such as those authorized for combined and sanitary sewer overflows and stormwater capture and reuse in the 2018 Water Resources Development Act.

We also need to explore whether the Federal Government can play a role in helping subsidize the cost of clean water at a household level, as we do today for household heating and cooling costs through the Low Income Home Energy Assistance Program. That is a mouthful, LIHEAP.

Many States and communities run similar rate assistance programs today, but I believe the Federal Government can take a greater role to reduce the cost of water to our American families, and I hope to discuss this issue further.

Before us, we have a distinguished panel of witnesses that can talk about real-world examples of where our network of clean water infrastructure works, where it does not, and what we can do better.

I urge all of our Members to pay attention, listen to their stories, and to reflect on the real challenges American families face, every day, in obtaining clean, safe, and affordable water and wastewater services.

[Mrs. Napolitano's prepared statement follows:]

Prepared Statement of Hon. Grace F. Napolitano, a Representative in Congress from the State of California, and Chair, Subcommittee on Water Resources and Environment

Good Morning. Welcome the first meeting of the Subcommittee on Water Resources and Environment for the 116th Congress. I call this hearing to order.

Today's hearing focuses on the tremendous clean water infrastructure needs facing our country, and on the challenges facing both our communities—large and small, urban, rural and tribal—as well as our American families, in addressing these needs.

It is a privilege to serve as the chairwoman of this subcommittee, and I am pleased to be joined by my colleague and the ranking member, Congressman Bruce Westerman of Hot Springs, Arkansas. We had a good meeting a few weeks ago, and I look forward to working with you this Congress.

I also welcome the new Members to the subcommittee: Rep. Debbie Mucarsel-Powell of Florida, Rep. Salud Carbajal of California, Rep. Adriano Espaillat of New York, Rep. Lizzie Fletcher of Texas, Rep. Abby Finkenauer of Iowa, Rep. Antonio Delgado of New York, Rep. Chris Pappas of New Hampshire, Rep. Angie Craig of Minnesota, Rep. Harley Rouda of California, Rep. Stephen Lynch of Massachusetts, Rep. Tom Malinowski of New Jersey, Rep. Gary J. Palmer of Alabama, and Rep. Jenniffer González-Colón of Puerto Rico.

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We have an ambitious but achievable agenda this Congress.

We will seek to find a legislative mechanism to ensure that collections for harbor maintenance are spent annually.

We will hold hearings on WRDA 2018 implementation, and lay the groundwork for enactment of a new WRDA bill in 2020. As part of these discussions, we will look at ways to make our communities more resilient, by learning about how we can use natural infrastructure, water recycling, and other tools.

We will strive to enact a bipartisan water infrastructure financing bill that not only reauthorizes the Clean Water State Revolving Fund (SRF), but also seeks to address the affordability challenges facing all of our communities.

Finally, we will renew our constitutional obligation to exercise congressional oversight over implementation of the laws within our subcommittee's jurisdiction.

Now, to the topic of this hearing—today, our nation's network of sewers, stormwater conveyances, and treatment facilities is aging, often outdated, and, in many places, not meeting the needs of our communities or water quality standards.

The American Society of Civil Engineers recently gave America's wastewater infrastructure a grade of a D+ in its 2017 Infrastructure Report Card. According to the Environmental Protection Agency, communities report a need of almost \$300 billion of investment over the next 20 years to bring their wastewater treatment systems to a state of good repair.

Yet, these statistics only tell half the story.

As noted by our witnesses here today, many communities also face the challenge of ensuring that water and sewer utilities remain affordable to those living in the community.

As communities of all sizes seek to continuously improve the quality, safety, and reliability of their water utilities, they often struggle to also address challenges of declining rate bases, lower income households, and other competing local needs.

All of these factors compel us to find ways to make water quality improvements more affordable to our communities.

Congress has already taken significant steps to help meet this challenge. Through enactment of integrated planning legislation and the promotion of nature-based or green infrastructure alternatives to addressing local water quality challenges, we have provided tools to communities to develop more cost-effective, long-term plans to meeting local water quality challenges.

However, more needs to be done.

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On Tuesday, I was pleased to join Chairman DeFazio, Congressman Don Young, and Congressman John Katko in introducing H.R. 1497, the Water Quality Protection and Job Creation Act to reauthorize the Clean Water SRF, and I urge all of our Members to support this bipartisan effort to address local water quality challenges.

However, for those communities where a State Revolving Fund loan is still not enough to address local affordability needs, we need to ensure other tools are available. We need to fund targeted clean water grants, such as those authorized for

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Many States and communities run similar rate assistance programs today, but I believe the Federal government can take a greater role to reduce the cost of water to our American families, and I hope to discuss this issue further today.

Before us, we have a distinguished panel of witnesses that can talk about real-world examples of where our network of clean water infrastructure works, where it does not, and what we can do better.

I urge all of our Members to pay attention, listen to their stories and to reflect on the real challenges American families face, every day, in obtaining clean, safe, and affordable water and wastewater services.

Mrs. NAPOLITANO. At this time, I am pleased to yield to my colleague, the ranking member of our subcommittee, Mr. Westerman, for any thoughts he may have.

Mr. WESTERMAN. Thank you, Chairwoman Napolitano.

It is an honor to get to serve with you, to be on the leadership side of the Republican side of the dais, but I look forward to working with you for good solutions that are good for America.

You know, a lot of times there is a lot to be said in a name, and I think Chairwoman Napolitano could not have a better first name than Grace. I have always said that the definition of Grace is getting something good that you do not deserve, and she exemplifies that. She is very kind, very nice to work with.

It does not mean she is not tough and principled, but I appreciate the kindness and the openness to work together, and I look forward to carrying that relationship forward as we address these important issues.

I am happy that we have such a diverse panel here so that we can gain your perspective on the issues facing local communities and addressing the Nation's water and wastewater infrastructure needs.

These needs are substantial, and they continue to grow. In many communities, including communities in my State, in my district, water and wastewater infrastructure is long past its design life and in need of urgent repair, replacement and upgrading.

As a result, we see leaks and blockages that are all too common across the Nation and represent a massive waste of a vital and sometimes scarce resource.

Additionally, the needs are especially urgent for hundreds of communities trying to remedy the problem of combined sewer overflows, or CSOs, and sanitary sewer overflows, or SSOs. Shrinking municipal budgets, insufficient independent financing capabilities, and increasingly burdensome regulations without the necessary Federal support has strained communities' efforts to address these critical needs.

This is especially the case for many of our small and rural communities. According to EPA, the total documented need for sustainable wastewater infrastructure, CSO and SSO correction, and stormwater management are over \$270 billion over the next 20 years.

The needs for drinking water infrastructure drive this figure to over \$600 billion, and these are considered conservative estimates.

In Arkansas alone, the total documented needs are approaching \$1 billion.

So with talk of a major infrastructure package, today we need to ask the not so simple question: what can we do?

How can we—and I do not necessarily mean the Federal Government—collectively, how can we pay for it?

I believe it is going to take an “all hands on deck” approach to reverse the decline of our Nation’s water infrastructure. Federal, State and local investment will be necessary, but cannot be relied upon to solve all of our problems.

Instead we need to move away from business as usual and utilize every tool that is available. This means searching for new sources of funding, increasing collaboration between the public and private sectors, and improving Federal regulations.

We need smarter asset management and increased efficiencies in our water systems, and to achieve that, we need to incentivize the adoption of new and innovative technologies that will cut cost and improve water quality.

In addition, communities, particularly those that are struggling to address their needs and reduce the financial burdens on households, need to be given greater flexibility, including through the implementation of a vibrant integrated planning and permitting approach in addressing the compliance mandates that have been imposed upon them.

Last year, the legislation that codified the EPA’s integrated planning initiative was enacted. EPA now needs to effectively implement the initiative to help communities meet their needs in a more cost-effective manner.

We need to carefully prioritize our investments in water infrastructure to ensure that we are adequately protecting the public health, promoting the economic growth of our communities, and preventing the degradation of the environment.

I look forward to hearing the thoughts of our witnesses today, and again, Chairwoman, it is an honor to be here in our first hearing. Having an engineering background and reading the testimony, it is kind of exciting to us nerds in the world.

[Laughter]

Mr. WESTERMAN. So I look forward to getting the hearing started, and I yield back.

[Mr. Westerman’s prepared statement follows:]

Prepared Statement of Hon. Bruce Westerman, a Representative in Congress from the State of Arkansas, and Ranking Member, Subcommittee on Water Resources and Environment

Thank you, Chairwoman Napolitano, and thank you to our witnesses for being here.

I’m happy we have such a diverse panel here so that we can gain their perspectives on the issues facing local communities in addressing the Nation’s water and wastewater infrastructure needs. These needs are substantial, and they continue to grow.

In many communities, water and wastewater infrastructure is long past its design life and in need of urgent repair, replacement, and upgrading. As a result, leaks and blockages are all too common across the Nation and represent a massive waste of a vital, and sometimes scarce, resource.

Additionally, the needs are especially urgent for hundreds of communities trying to remedy the problem of combined sewer overflows (or CSOs) and sanitary sewer overflows (or SSOs).

Shrinking municipal budgets, insufficient independent financing capabilities, and increasingly burdensome regulations without the necessary federal support have strained communities' efforts to address these critical needs. This is especially the case for many of our small and rural communities.

According to EPA, the total documented needs for sustainable wastewater infrastructure, CSO and SSO correction, and stormwater management are over \$270 billion over the next 20 years. The needs for drinking water infrastructure drive this figure to over \$600 billion. And these are considered conservative estimates.

In Arkansas alone, the total documented needs are approaching \$1 billion.

So with talk of a major infrastructure package, today we need to ask the not-so-simple questions: What can we do? How are we collectively going to pay for it?

I believe it is going to take an all-hands-on-deck approach to reverse the decline of our Nation's water infrastructure. Federal, State, and local investment will be necessary, but cannot be relied upon to solve all our problems. Instead, we need to move away from "business as usual" and utilize every tool available.

This means searching for new sources of funding, increasing collaboration between the public and private sectors, and improving federal regulations.

We need smarter asset management and increased efficiencies in our water systems, and to achieve that, we need to incentivize the adoption of new and innovative technologies that will cut costs and improve water quality.

In addition, communities—particularly those that are struggling to address their needs and reduce the financial burdens on households—need to be given greater flexibility, including through the implementation of a vibrant integrated planning and permitting approach, in addressing the compliance mandates that have been imposed on them.

Late last year, legislation that codified the EPA's Integrated Planning Initiative was enacted. EPA now needs to effectively implement the Initiative to help communities meet their needs in a more cost-effective manner.

We need to carefully prioritize our investments in water infrastructure to ensure that we are adequately protecting the public health, promoting the economic growth of our communities, and preventing the degradation of the environment.

I look forward to hearing thoughts from our witnesses today.

Mrs. NAPOLITANO. Thank you, sir, and thank you for your kind words.

It is a pleasure to have him working with us. It truly is, in a bipartisan manner.

I ask unanimous consent that the following submissions be made part of today's hearing record:

A statement from the chairman of the committee, Peter A. DeFazio;

A statement from the Honorable Terri Sewell from Alabama;

A letter, dated March 5th, 2019, from the Western Governors' Association;

A statement from the American Society of Civil Engineers.

Are there any objections?

[No response.]

Mrs. NAPOLITANO. If not, so ordered.

[The information follows:]

Prepared Statement of Hon. Peter A. DeFazio, a Representative in Congress from the State of Oregon, and Chair, Committee on Transportation and Infrastructure, Submitted for the Record by Mrs. Napolitano

Thank you, Madam Chairwoman, and congratulations on holding the first hearing of the Subcommittee on Water Resources and Environment.

Today's hearing continues to tell the story on both the tremendous infrastructure needs facing this nation, as well as on the consequences to everyday Americans from our failure to invest in our water-related infrastructure systems.

It is important to remember that in the days before enactment of the Clean Water Act, our nation's waters were so polluted that they typically were unsafe for swimming, were unable to support life, or they literally caught fire.

Recognizing that we needed to do things differently and that pollution does not respect political or State boundaries, Congress enacted a comprehensive, national water pollution control program and provided States and communities with substantial funding to help address local water quality challenges.

In the years immediately following the Clean Water Act, significant progress was made in cleaning up our waters. Yet, in recent years, the importance of safe, reliable, and affordable water systems has, again, become front page news, all across the country.

In Flint, Michigan, a series of bad decisions, aging infrastructure, and poor local water quality resulted in the contamination of household drinking water supply for almost an entire city.

In Toledo, Ohio, nutrient water quality contamination in Lake Erie forced the third largest city in the State to warn its citizens not to drink or even brush their teeth with their own water for days.

In Charleston, West Virginia, a release of a toxic chemical immediately upstream of its drinking water intake shut down the State capital's drinking water supply for close to a week.

Closer to home, just this past month, in Coos Bay, Oregon, an intense rainstorm that dropped over 5 inches of rain over two days overwhelmed our sewer system and caused the release of over 36,000 gallons of sewer overflows into Coos Bay through the storm drain system.

What all of these stories remind us is what we already should know—that our nation's network of water infrastructure is aging, outdated, and in desperate need of repair. We also now recognize that our water-related infrastructure is woefully inadequate to adapt to a changing climate, and to the extreme weather events and coastal storms that have become the norm.

Numerous studies and reports have documented the poor national condition of our water infrastructure and the growing financial gap between infrastructure needs and available resources.

These stories also demonstrate how our communities, both large and small, remain vulnerable to losing their basic water and sanitation services at a moment's notice, and how we need to invest in the protection and resilience of our water utilities. That is why I was pleased to join with the chairwoman and Congressmen Don Young and John Katko in a bill to reauthorize increased appropriations for the Clean Water State Revolving Fund program.

Finally, these examples highlight how essential comprehensive Clean Water Act authorities are to protect the health of our citizens, our local economies, and our environment. Clean, safe, and reliable water should be a basic human right—and we should all, vigilantly, fight against efforts to weaken those protections, including those pursued by the current administration.

Lastly, Madam Chairwoman, I am pleased that today's hearing highlights the growing affordability gap for basic water and sewer services.

As the Federal government has pulled back on the share of Federal funds it contributes to local water and sewer projects, rate payers are typically asked to fill in the gap.

While recent reports noted how the costs of water services are generally low when compared to other utilities, these costs also represent a higher share of income for those households in the lowest 20 percent of income—those with the least ability to pay.

Today, several of our witnesses will provide the committee real-life examples on the consequences of unaffordable water services—from the threat of thousands of water and sewer shutoff notices issued in the city of Detroit to the re-emergence of hookworm—a parasite that thrives in areas without basic sanitation—here in the United States.

We need to do better.

Communities throughout the country are generally trying to do the right thing—to ensure clean, safe, and reliable water services to their citizens.

However, we, in Congress must do our part as well—to ensure that we meet the Clean Water Act's "fishable and swimmable" goals we established for ourselves almost 50 years ago, and to do so in a manner that is affordable for all hard-working American families.

Thank you, Madam Chairwoman.

Prepared Statement of Hon. Terri A. Sewell, a Representative in Congress from the State of Alabama, Submitted for the Record by Mrs. Napolitano

Chairwoman Napolitano and Ranking Member Bruce Westerman,

Thank you for hosting today's hearing on the need for federal infrastructure investment to help communities modernize water infrastructure and address affordability challenges. This issue is so critical, especially in rural communities like so many of the ones I represent, where millions of Americans are living with failing wastewater systems and contaminated drinking water.

I am proud that Catherine Flowers, who is from my congressional district, is a witness today. I want to thank Chairman DeFazio and Chairwoman Napolitano for making sure that we have witnesses like Catherine who can talk about the real-life impact of our failure to invest in wastewater infrastructure. And I appreciate all of you for allowing me to submit these remarks for the record today as an off-committee member.

Catherine has been working for decades in Lowndes County and Alabama's Black Belt to improve the quality of life for so many families. She has been a tireless advocate on behalf of some of our Nation's most vulnerable people. And today, she is bringing their story to Washington. She has been effective in shining a light on this wastewater crisis and bringing much needed attention to the issue in the national and international press.

A serious problem facing my constituents is the state of rural wastewater infrastructure. For too long, many rural Americans have not had access to properly-functioning and affordable wastewater treatment systems.

The vast majority of Americans are served by municipal water-treatment plants, where waste is carried directly from homes to wastewater treatment plants. An approximate 20 percent of Americans, mostly in rural communities, are responsible for the installation and maintenance of their own sewage disposal systems because they are not connected to a municipal line. Some of these Americans have properly designed and maintained septic tanks that keep bacteria, viruses, and nutrients out of groundwater, drinking water, and bodies of water where humans recreate. These systems can cost between \$4,000 and more than \$12,000 depending on size, complexity, location, and soil conditions. Due in part to the unaffordability of such a basic domestic utility, there are potentially millions of Americans living in areas where water has been contaminated by raw sewage from failing, improperly installed, or homemade septic systems.

Because of affordability and environmental barriers, many of my constituents rely on homemade systems such as "straight-pipe septic systems," in which a pipe deposits untreated, raw sewage directly into yards, ditches, drain pipes, bodies of water, and other areas where humans and animals have direct and indirect access. Others are living with failing septic systems that discharge raw sewage into homes, land, and water, and do not have the income necessary to fix them.

And this issue isn't unique to my district or Alabama. Rural communities across the country—from West Virginia to California—are struggling with failing septic tanks or makeshift septic systems. According to the U.S. Census Bureau's American Housing Survey, as of 2013, 1.25 million housing units across all 50 States lack adequate plumbing. More specifically, as of 2015, there are nearly 200,000 housing units in the United States without a sewage system altogether—meaning these homes do not have an adequate method for disposing of human waste.

And as Catherine discussed in her testimony, many residents in Lowndes County have tested positive for parasitic infections. In 2019, it is unacceptable that American families are at risk of parasitic infections because this country hasn't provided proper wastewater infrastructure to rural Americans.

We've made a lot of progress over the past couple of years in Congress. I'm proud that we secured an additional \$1.8 billion in rural wastewater funding in FY2018 with the help of Alabama Congressman Robert Aderholt. That funding has been awarded in communities across the country, including Lowndes County and other parts of the 7th district.

We also secured new language in the Farm Bill creating a rural septic tank access program. Alabama Congressman Mike Rogers introduced that bill with us on the House side and Senators Doug Jones, Cory Booker, and Shelley Moore Capito introduced on the Senate side. We will fight for more funding for that program during this Appropriations cycle and for years to come. We will also work to streamline the Clean Water State Revolving Fund to ensure States are using that funding where it is needed the most.

We've been fortunate to coalesce a wonderful and eager group of engineering experts and stakeholders from the University of Alabama, Auburn University, University of South Alabama, and Columbia University to identify and develop an afford-

able decentralized system that can work in rural places like Lowndes County. Researchers at the University of Alabama at Birmingham have been awarded CDC funding to conduct parasite studies in the Black Belt. We will be successful in our efforts because we have gathered a coalition of stakeholders who are committed to doing everything in their power to bring proper wastewater infrastructure to rural places across the country.

The families I represent do not need our pity. They need our commitment to addressing this issue once and for all. I look forward to working with Chairman DeFazio, Chairwoman Napolitano and all the members of this committee on this issue in the months and years to come. I would like to reiterate how appreciative I am that Catherine Flowers is a witness on today's panel. I yield back.

**Letter from the Western Governors' Association, Submitted for the Record
by Mrs. Napolitano**

MARCH 5, 2019.

Hon. GRACE NAPOLITANO
Chair

Hon. BRUCE WESTERMAN
Ranking Member

*Subcommittee on Water Resources and Environment, Committee on Transportation
and Infrastructure, U.S. House of Representatives
Washington, DC 20515*

DEAR CHAIR NAPOLITANO AND RANKING MEMBER WESTERMAN:

Western Governors support federal policies that promote states' abilities to implement the federal Clean Water Act (CWA) and to protect their water resources. Thank you for examining the important topic of clean water needs and affordability at the Subcommittee's March 8 hearing to examine the Water Quality Protection and Job Creation Act of 2019. To inform the Subcommittee's consideration of this subject and proposed legislation, I request that you include the following attachments in the permanent record of the hearing:

- WGA Policy Resolution 2018–08, Water Resource Management in the West;
- WGA Policy Resolution 2018–12, Water Quality in the West; and
- A February 20, 2019 letter from the Western Governors' Association, National Conference of State Legislatures, Association of Clean Water Administrators, Association of State Wetland Managers, Council of State Governments–West, and the Western States Water Council to the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers which presents recommendations that would improve permitting processes under the CWA while preserving states' authority to manage and protect water resources.

Western states are eager to serve as a resource to the Subcommittee as it examines these critical issues and seeks improvements to the CWA. Thank you for your consideration of this request.

Sincerely,

JAMES D. OGSBURY
Executive Director

WGA POLICY RESOLUTION 2018–08 WATER RESOURCE MANAGEMENT IN THE WEST

Retained in the committee files and available at <http://westgov.org/resolutions/policy-resolution-2018-08-water-resource-management-in-the-west>

POLICY RESOLUTION 2018–12: WATER QUALITY IN THE WEST

Retained in the committee files and available at <http://westgov.org/resolutions/policy-resolution-2018-12-water-quality-in-the-west>

LETTER DATED FEBRUARY 20, 2019

Retained in the committee files and available at <http://westgov.org/letters/letter-wga-led-coalition-shares-recommendations-for-clean-water-act-section-401-process-reforms-with-epa-army-corps>

**Statement of the American Society of Civil Engineers, Submitted for the
Record by Mrs. Napolitano**

INTRODUCTION

The American Society of Civil Engineers (ASCE) appreciates the opportunity to submit our position on the importance of long-term, strategic investment in our nation's water infrastructure systems. ASCE also thanks the U.S. House of Representatives Transportation and Infrastructure Subcommittee on Water Resources and Environment for holding a hearing on this critical issue. ASCE is eager to work with the Subcommittee in the 116th Congress to reauthorize the Clean Water State Revolving Fund.

ASCE's 2017 Infrastructure Report Card

Infrastructure is the foundation that connects the nation's businesses, communities, and people, serves as the backbone to the U.S. economy, and is vital to the nation's public health and welfare. Every four years, ASCE publishes the *Infrastructure Report Card*, which grades the nation's 16 major infrastructure categories using a simple A to F school report card format. The Report Card examines the current infrastructure needs and conditions, assigning grades and making recommendations to raise them.

ASCE's *2017 Infrastructure Report Card* rated the overall condition of the nation's infrastructure a cumulative grade of "D+" across sixteen categories, with an investment gap of \$2 trillion. The Report Card gave our nation's wastewater infrastructure category a grade of "D+," while our nation's drinking water infrastructure category received a grade of "D."

Millions of new users are expected to be connected to centralized wastewater treatment centers in the coming years. America's wastewater and drinking infrastructure provide a critical service; therefore, it is crucial that all levels of government and the private sector make sustained, significant, and strategic investments these infrastructure systems.

INVESTMENT SHORTFALLS TOTAL BILLIONS OF DOLLARS

A well-maintained public drinking water and wastewater infrastructure is critical for public health, strong businesses, and clean waters and aquifers. However, funding both capital projects and operations and maintenance (O&M) is difficult because the public often does not appreciate the modern convenience of wastewater and drinking water treatment, making it difficult to convey the need for water rate increases. Furthermore, capital spending has not kept pace with needs. If these trends continue, the funding gap will only widen, resulting in leaking pipes, source water pollution, and increases in the cost of O&M.

Overall, the nation's infrastructure funding gap comes to \$2 trillion over 10 years. Despite increased efficiency methods and sustainable practices, there is a growing gap between the capital needed to maintain drinking water and wastewater infrastructure and the actual investments made. By 2025, the disparity between needed and anticipated funding for drinking water and wastewater systems will be \$105 billion.

The nation's drinking water systems face staggering public investment needs over the next several decades. According to the American Water Works Association¹, \$1 trillion will be needed to maintain and expand drinking water service demands during the next 25 years. Many of the pipes that deliver drinking water in the nation were laid in the early to mid-20th century with a lifespan of 75–100 years. Failures in drinking water infrastructure can result in water disruptions, impediments to emergency response, and damage to other types of essential infrastructure. Every day, nearly six billion gallons of treated water is lost due to leaking pipes, with an estimated 240,000 water main breaks occurring each year. It is estimated that leaky, aging pipes waste about 14 to 18 percent of each day's treated drinking water—enough to support 15 million households.

Nearly 240 million Americans—76 percent of the population—rely on the nation's 14,748 treatment plants for wastewater sanitation. There are over 800,000 miles of public sewers and 500,000 miles of private lateral sewers connecting private property to public sewer lines. Each of these conveyance systems is susceptible to failure, blockages, and overflows.

As cities continue to experience population growth and rural households switch from septic systems to public sewers, pressure on existing centralized systems will

¹ American Water Works Association, *Buried No Longer: Confronting America's Water Infrastructure Challenge*, February 2012

require billions of dollars in investment to meet federal regulatory requirements. Over the next two decades, it is estimated that more than 56 million new users will be connected to centralized wastewater systems, which will require the construction of 532 new systems by 2032 to meet future demand. The U.S. Environmental Protection Agency (EPA)² estimates that over the course of the next 20 years, \$271 billion will be needed for wastewater infrastructure.

SOLUTIONS

Fortunately, Congress has provided some federal funding options that could help close the funding gap needed for drinking water and wastewater infrastructure if appropriated. Certainly, federal funding is not the only answer; since the mid-1970s, money from local and state governments has represented an increasing percentage—nearly 95 percent—of public drinking water and wastewater investment. Cities and towns across the country report that complying with federal wastewater and stormwater regulations represent some of their costliest capital infrastructure projects.

As some water systems have become privatized, private capital has become another financing mechanism. Regardless of whether a water system is publicly or privately owned or managed, households and businesses still ultimately foot the bill. Therefore, care much be taken to ensure that rates are set at levels sufficient to maintain and upgrade infrastructure while not increased so much that low-income residents would face financial hardship.

The federal government funds many infrastructure categories, and of all of these, water services receive less than 5 percent. However, the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF)—both authorized by Congress several decades ago—play a vital role in providing much-needed support for investments in state and local drinking and wastewater infrastructure.

In the past 30 years, the federal government has loaned \$42 billion to all 50 states, the District of Columbia, and Puerto Rico through the CWSRF, which has given states the ability to fund over \$126 billion in wastewater infrastructure system improvements—all through low-interest financing. Every dollar provided by the federal government is matched at 20 percent by the state.

Likewise, the DWSRF program provides low-interest loans to state and local infrastructure projects. The EPA provides an allotment of funding for each state, and like the CWSRF, each state provides a 20 percent match. Since the program's inception, \$35.4 billion of low-interest loans have been allocated. ASCE was pleased that the DWSRF was reauthorized at increasing funding levels in the America's Water Infrastructure Act of 2018 (P.L. 115–270, Sec. 2023) and urges Congress to reauthorize the CWSRF at increasing funding levels, as well.

ASCE believes that our nation's elected leaders need to act quickly to address the growing gap in drinking water and wastewater infrastructure investment. We urge Congress to:

1. Renew the federal commitment to water infrastructure by reinvigorating the CWSRF program through permanent reauthorization and tripling the amount of annual authorization and appropriations.
2. Fully fund the WIFIA program at no less than the FY19 enacted level of \$68 million.
3. Eliminate the state cap on private activity bonds for water infrastructure projects to bring an estimated \$6 billion to \$7 billion annually in new private financing to bear on the problem.
4. Create legislation to allow Public Private Partnerships (P3) as one of many methods of financing water infrastructure improvements. ASCE supports the use of P3 project delivery methods to enhance federal, state and local resources when the public interest is protected.
6. Preserve tax exempt municipal bond financing, which provides communities with low-cost access to capital for drinking water and wastewater infrastructure upgrades.
7. Support green infrastructure solutions, which provide co-benefits such as water and quality improvement, aesthetic value to communities, and cost competitiveness.
5. Create legislation to establish a dedicated source of revenue for drinking water and wastewater infrastructure projects that would provide a stable, long-term basis for financing for these critical systems.

² Environmental Protection Agency, *Clean Water Needs Survey, 2012 Report to Congress*, December 2016.

Finally, ASCE believes our nation must prioritize the investment needs of our wastewater and drinking water infrastructure to ensure public health, a strong economy, and clean and safe water sources. Strategic, robust, and sustained investments in these water infrastructure systems from a variety of mechanisms must be made quickly if we hope to close the growing funding gap. ASCE thanks the Subcommittee for holding this hearing and bringing attention to this critical matter. We look forward to working with you to find solutions to our nation's wastewater and drinking water infrastructure investment needs.

Mrs. NAPOLITANO. Thank you.

We will now proceed to hear from our witnesses who will testify. Thank you for being here, and welcome to our House and your House.

We have the Honorable David Condon, mayor, city of Spokane, Washington; and Mr. John Mokszycki, the water and sewer superintendent from the town of Greenport, New York. He will be introduced by Mr. Delgado.

Ms. Catherine Flowers with Equal Justice Initiative, Montgomery, Alabama; Ms. Maureen Taylor with Michigan Welfare Rights Organization, Detroit, Michigan; Mr. Andrew Kricun from the Camden County, New Jersey, Municipal Utilities Authority; and Professor Jill Heaps, from the Vermont Law School.

Your prepared statements will be entered into the record. All witnesses are asked to limit their remarks to 5 minutes.

Mr. Delgado, would you like to introduce Mr. Mokszycki?

Mr. DELGADO. I surely would. Thank you, Chairwoman. I appreciate the opportunity.

It is my great honor to introduce one of the witnesses on today's panel, Mr. John Mokszycki. John grew up in Athens, New York, and attended St. Pat's High School. He now lives in Stottville, New York, with his wife of 37 years, Dawn, and their three sons.

John earned a degree in biology from SUNY, Oswego, and after beginning his career in California, returned to New York to run a small water treatment plant in Valatie. John then began to work as a senior operator for the town of Greenport in 1998.

In 2000, he became a superintendent of the water and wastewater department for the town of Greenport. His role as superintendent has made him a leader on rural water infrastructure needs.

John has worked to diligently repair and replace broken water lines, as well as to oversee the construction of a new sewage treatment plant in the town.

John has played an important role in dealing with the wastewater collection after flooding events caused by severe storms. After a hurricane in 2014, the town of Greenport experienced sewage water backing up and overflowing in the homes. John was responsible for overseeing the inspection, drainage, and repair of the overloaded pipes.

The town of Greenport has seen no overflow issues since the project was completed in 2015.

John is also responsible for the creation of a reimbursement program the town employed to get backflow preventers installed in individual residences. Through this program, residents were reimbursed up to \$3,000.

The town of Greenport will be looking to replace 14,000 feet of pipe starting in June, and John will be leading that project.

I look forward to hearing his testimony today, and I am excited to get to work with the committee on ways to help address the rural water infrastructure needs of the communities like that of Greenport.

Thank you, Chairwoman.

Mrs. NAPOLITANO. Thank you, Mr. Delgado.

Mr. Condon, you may proceed.

TESTIMONY OF HON. DAVID CONDON, MAYOR, CITY OF SPOKANE, WASHINGTON, ON BEHALF OF THE UNITED STATES CONFERENCE OF MAYORS; JOHN MOKSZYCKI, WATER SUPERINTENDENT, TOWN OF GREENPORT, NEW YORK, ON BEHALF OF THE NATIONAL RURAL WATER ASSOCIATION AND NEW YORK RURAL WATER ASSOCIATION; CATHERINE COLEMAN FLOWERS, RURAL DEVELOPMENT MANAGER, EQUAL JUSTICE INITIATIVE, MONTGOMERY, ALABAMA; MAUREEN TAYLOR, STATE CHAIRPERSON, MICHIGAN WELFARE RIGHTS ORGANIZATION, DETROIT, MICHIGAN; ANDREW KRICUN, P.E., BCEE, EXECUTIVE DIRECTOR/CHIEF ENGINEER, CAMDEN COUNTY MUNICIPAL UTILITIES AUTHORITY, CAMDEN, NEW JERSEY; AND JILL WITKOWSKI HEAPS, VISITING SCHOLAR, UNIVERSITY AT BUFFALO SCHOOL OF LAW, AND ASSISTANT PROFESSOR, VERMONT LAW SCHOOL

Mr. CONDON. Well, good morning, and I would like to thank Chairwoman Napolitano and Ranking Member Westerman and the members of the committee for inviting me to speak today.

My name is David Condon, and I am the mayor of the city of Spokane, and I am also representing the U.S. Conference of Mayors.

I have served on the Mayors Water Council for the last 7 years as part of the Conference and have served with many of our other local leaders, many from California and across the country, in really explaining why this infrastructure is so critical.

Thank you for the opportunity to speak, especially to address H.R. 1497 and really look to the future of infrastructure in wastewater.

Cities need the Federal infrastructure investment in stormwater and wastewater projects. We need flexibility in meeting the regulatory requirements, and we need support for the innovation for affordable challenges or for addressing the affordable challenges when delivering clean water projects.

Last year, you said it and we want to thank you for passing the integrated planning legislation, H.R. 7279. You know, it really took that leadership of this committee to make sure that integrated planning is a key component to the futures of the water infrastructure. It is so critical to Spokane's story.

You know, I want to tell you a little bit about Spokane. I was elected in part because of water rates that went up 16 percent in a single year in my city. What happens in the fall? People get their bills from August and July.

Because of those double digit increases from the primary to the general, there was a double-digit swing in the vote count which led to my election.

So when I took office, I took that lesson with me. I came here to Washington, DC, and met with EPA officials in about this month of my first year, March. EPA officials told me you should ask for a consent decree and blame it on the Federal Government.

They also said at the time they were thinking about a new approach, integrated planning, and that I should look to our region to look at it. So we took that approach. We saved our citizens some \$150 million and at the same time got better pollution reduction results for our river.

You can see if you have our handout that our city is around a beautiful Spokane River. Still, Spokane's citizens are investing some \$350 million to improve the health of that river. We are investing in some two dozen tanks which hold about 16 million gallons.

We also are putting in some of the top tier technology in our treatment plant, some of which treats about 34 million gallons a year. We are using a membrane technology that is commonly used in drinking water solutions.

We also have a commitment to remove stormwater flows from our system as we build our streets and have complete streets looking at all sorts of integrated solutions you can see on the back side of your handout on slide 2.

You know, it really comes down to this, and I will spend some time on this. It really talks about aligning our work with our citizens and our country's environmental goals. It is talking about making sure that we are accountable and, finally, affordable.

So, yes, we are aligned with our citizens' environmental goals and integration across our city. You can see on pictures 3, 4, and 5 that our integrated solutions have resulted in play fields, a new plaza overlooking our river, and improved gateways to our city on top of those CSO tanks. Never thought of before.

We also must be accountable, yes, accountable to regulations, but also accountable to make sure that we deliver on the permit.

Finally, affordability. This investment, the largest ever for our city, is some \$4,000 per household on this alone. But we are committed to our rate increases not being any more than inflation, about 2.9 percent.

And so as you can see in figure 1, like across this country, our community went through the ALICE assessment, asset limited, income constrained employed. For our community, that is some \$59,000 for a family of four, but our median household income, \$46,500.

You can see on the line for housing some \$789 is allocated to rent or housing costs. Take out of that a couple hundred dollars for utilities. That leaves \$500 for a family of four to find an apartment. Even in Spokane that does not buy you much.

So we needed reasonable approaches and flexibility to meet the Clean Water Act.

I finish with this. One, I want to thank you for the additional authorization in this bill, but we clearly need to work with the appropriations to make that come true.

Number 2, I want to reiterate, and it is wonderful to hear it, that all parties, Federal, State, and local, must work together to look at

our priorities and make sure that the financial burden does not fall onto our citizens.

Number 3, we really need to think outside the box and into innovation. We need to define the funding source to support integrated projects. Right now we are forced to piecemeal together from many different funding sources, and if time permits in questioning, I would love to talk about one that we are facing right now.

And finally, number 4, Federal funding programs like your reauthorizing SRF are an amazing opportunity, and we need to continue to look at the opportunity for forgivable or lower percentage payback on those.

I want to finish. Speaker Foley would have turned 90 years old yesterday. I sat and spoke to his wife last night for a couple hours at her home here. At that time, he had secured for our community some \$100 million for a grant to remove septic systems from our community.

We'd had an innovative local plan that did that to make the quality of our water that much better. But that was a grant from the Federal Government.

So we believe the opportunity comes today to look back at that time and to make an investment in our environment like Speaker Foley did and this Congress has through the years, and we believe that this opportunity is a partnership with the Federal, State, and local governments.

Thank you, Chairwoman.

[Mr. Condon's prepared statement follows:]

**Prepared Statement of Hon. David Condon, Mayor, Spokane, Washington,
on behalf of the United States Conference of Mayors**

INTRODUCTION

Good morning Chairman Napolitano, Ranking Member Westerman, and members of the Committee. My name is David Condon and I am the Mayor of Spokane, Washington.

I thank you for this invitation to give the Conference of Mayors' and my perspective regarding Federal infrastructure investment and affordability challenges in the area of storm and wastewater infrastructure and compliance in the United States.

Let me start by thanking this committee for your work last year in passing Integrated Planning legislation (HR 7279). Integrated planning can, if implemented properly, provide the flexibility to begin to realign standards and requirements with local priorities and local financial capability. We encourage Congress to be vigilant as the U.S. Environmental Protection Agency (EPA) and the States implement this law so that it is done in the manner that was intended.

Integrated planning is an important tool to allow local governments to balance the costs of infrastructure financing and compliance with Clean Water Act mandates, and one that my community has relied on. I would also like to thank this subcommittee for introducing the Water Quality Protection and Job Creation Act and for holding this hearing today. By focusing on additional funding and affordability, you are building on your successful work from last year. As a Nation, we need additional funding as well as new approaches in wastewater and stormwater infrastructure investment and compliance and to do so in a more sustainable and affordable manner.

THE SPOKANE STORY

Let me take a moment to tell you the story of the Spokane River and the \$350 million investment that the city of Spokane citizens, businesses and utility customers are making to improve the river's health.

While the City manages the work, we need to recognize that the investment is made by the citizens. The work is being paid for with money from their monthly

utility bills for water and sewer. And not just right now: They will continue to pay for the improvements we have made over the last several years for at least another 15 years.

We sold \$200 million in designated “green” revenue bonds to pay for more than half the work, and those bond payments continue until 2034. Additionally, we have taken out another \$85 million in loans through Washington’s Clean Water SRF program. These loans charge interest and don’t have forgivable principal, by the way.

Our current river work is the largest infrastructure investment ever made by the city of Spokane—more than the \$110 million we spent to build a Waste to Energy Facility, more than the cost of our original wastewater treatment plant, more than separating storm sewers on the north side of Spokane or eliminating septic tanks.

And in those earlier projects, we received significant grant support from Federal or State partners. Then-U.S. Rep. Tom Foley helped secure a \$100 million grant for the Spokane area to eliminate septic tanks, and the State of Washington provided a \$60 million grant for the Waste-to-Energy plant out of \$450 million in general obligation bonds that it sold for solid waste disposal facilities, for example.

Today, our river work amounts to about a \$4,000 cost per household.

This is a GENERATIONAL investment—one that we can’t easily repeat, at least not for a long time. There are many priorities for the precious dollars our citizens provide beyond clean water—from public safety to parks to streets. We need to make choices and balance those priorities, ensuring that we give our citizens value for their dollar.

What does our generational investment look like? It looks like major construction projects throughout our City:

- We are completing work on a total of about 16 million gallons in underground storage to manage overflows from combined wastewater and stormwater sewers. We are finishing the last four of two dozen underground tanks, some of which can hold more than 2 million gallons of combined wastewater.
- We are adding a third level of treatment at the City’s water reclamation facility, which processes about 34 million gallons of wastewater a day. We are installing membrane technology traditionally used in drinking water treatment to dramatically improve the quality of our effluent. We will see a huge impact on phosphorus and other nutrients, hydrocarbons, metals, and persistent chemicals like PCBs. Our region is leading the way on this advanced technology; Spokane is one of the first places in the Nation required to install this level of technology at its wastewater plant.
- And we are working to reduce stormwater going to the river. We are voluntarily removing stormwater flows from our systems as we rebuild roads and complete other infrastructure projects to reduce the amount reaching our river.

Integration like this is important to this story. I want to thank you for passing legislation to allow for integration. Our Integrated Clean Water Plan, developed primarily in 2012 and 2013, relied on a memo from EPA that discussed integrated planning. I am telling you that we built a \$350 million program based on voluntary compliance and a memo.

EPA leaders at the time told us to seek a consent decree to buy more time to complete our Clean Water Act work and to blame the Federal Government for the cost. But we worked on a more holistic and practical solution that could be accepted by our citizens instead.

Our citizens have been willing to make this investment for two reasons—their love for our wild, spectacular river, to be sure, but also our commitment to complete the work for an affordable price.

We have refused to accept the notion that good government must be expensive government; we committed to making government affordable and still provide the services our citizens expect. We have committed to limit annual utility rate increases to about inflation—2.9 percent annually. And we’ve held to that commitment. We have held our utility rates increases to that inflationary increase for the last 6 years already.

When I took office in 2012, the City had completed a major utility rate study that indicated that we would need to implement multiple years of double-digit rate increases to meet our river requirements to manage CSOs and comply with the TMDL for dissolved oxygen. That would have sent monthly bills soaring.

Our rate story is a huge success story.

How were we able to do that? We are meeting our regulatory requirements, so it wasn’t that we cut corners. Our solution was INTEGRATION.

We followed that suggested guideline from the EPA called Integrated Planning. We looked at all pollutants, at all the pipes to the river, and considered how we could gain value for our citizens. We removed compounded factors of conservatism and designed to actual regulations. We built in mitigation for climate change and

for downsizing of some infrastructure by committing to remove stormwater when we rebuilt streets.

Some 78 percent of citizens supported that integrated approach which was detailed as part of a major Street Levy passed in 2014.

In the end, we cut about \$150 million of cost out of our previously identified Clean Water capital plans through this effort. And, we not only saved money but we also have documented a greater positive impact on pollutants going to the river.

We've since expanded our use of integrated thinking throughout our City in an effort to continue to find value for citizens. Multiple benefits for the same dollar.

This kind of thinking is absolutely imperative when you want to deliver better results but maintain affordability. Affordability is particularly important when you consider that our citizens make less. Our median household income (MHI) in the city of Spokane is about \$46,500, considerably less than the national or Statewide MHI.

And less than what's known as the ALICE standard for our community. ALICE stands for Asset Limited, Income Constrained Employed. The ALICE number looks at how much money a family needs just to meet their expenses paycheck to paycheck. In Spokane, that number for a family of 4 is nearly \$59,000—more than \$12,000 more than the median household income.

An ALICE budget for that Spokane family of 4 allocates about \$800 a month for housing, including bills for energy and water, sewer and garbage. After paying those utility bills, that family would have in the neighborhood of \$500 to \$600 a month for rent, which is more typically the cost of a one-bedroom unit in our market.

So, we are compelled to come up with environmentally responsible solutions that are also financially sustainable for our citizens.

Support for clean water from our State and Federal Governments is absolutely critical to maintain that affordability. Because our investments in our river won't stop with our current generational investment. We can't even really quantify what's next for our community.

Water Quality Standards in our State now include a standard for PCBs at 7 parts per quadrillion. There is no test that is accurate down to that level, and there is no technology known to reliably achieve this standard. We face unknown costs to meet this standard, which is magnitudes more stringent than most other places in the Nation.

Bear with me for a moment while I put that number in perspective. A million seconds is 12 days, so it was still February a million seconds ago. A billion seconds ago, it was 1987. A trillion seconds ago, we had no written human history. A quadrillion seconds takes 31 million years. Effectively, with our standard, we are looking for 7 seconds in 31 million years.

We need reasonable approaches and flexibility to achieve clean water for our communities. In preparation for this meeting, I was asked to recommend creative new approaches to help local communities. We would suggest defined funding to support integrated projects. Right now, we are forced to piecemeal together funding from various sources for projects that would have true Clean Water outcomes.

In Spokane, separation of storm sewers in the 1980's created what's called the Cochran Stormwater Basin. Through one 54-inch pipe flows about half the stormwater that goes to the Spokane River annually between 300 million and 600 million gallons a year. Because we don't have specific stormwater requirements, we haven't been able to fund the integrated, green infrastructure project that would manage this known, point source of pollution. We've gotten a few million to complete design and small pieces of the project. But this is an opportunity to achieve the results the Clean Water Act is seeking.

Remember, local governments are not making a profit; they are taking care of a community's waste. And, we need strong financial partners who will walk alongside with us.

USCM INFRASTRUCTURE POLICY/CONGRESSIONAL PROPOSAL

On behalf of the Conference of Mayors, I want to thank you for introducing The Water Quality Protection and Job Creation Act, which authorizes a continuation of the State Revolving Fund (SRF) loan program. This proposal sends two clear messages to cities across the Nation:

- This House Subcommittee has demonstrated that they have heard and understand the financial burden that clean water mandates have on distressed communities and households. Thus, this proposal provides a much more generous Federal financial assistance amount than in the last several decades (with the exception of ARRA), and it does not contain directions to the USEPA to establish additional mandates.

- Second, the Committee has convened this hearing to learn the perspectives of those at the local level who provide all of the services and nearly 98 percent of the funding to provide the service and comply with mandates. Asking local government their opinion on this matter is critical if we are going to continue to make progress.

And while we are grateful for the sums of money in this consideration, I think all will agree, these amounts are not enough to address every wastewater infrastructure investment need, so reliance on a more flexible model to improve water quality can be achieved through the Integrated Planning and other potential tools.

One of these tools that unfortunately was not included in H.R. 7279 last year was direction to EPA to reconsider how they assess a community's financial capability and a determination of what individual citizens or households could afford. As I talked about earlier, our communities and more importantly, our residents, do not have unlimited resources to bear the burden of implementing every rule and regulation without support or without regard to context. Today, we are faced with a myriad of pressing and complex public health and environmental challenges that require the careful evaluation of each public dollar spent against competing causes.

As my Mayoral colleagues have mentioned before, it is crucial that we renew the Federal-State-city partnership to identify and invest in environmental and public health infrastructure. Attached to my testimony is a letter signed by the Conference of Mayors, National League of Cities, and National Association of Counties that supports the authorization proposal and encourages Congress to appropriate these levels of assistance for wastewater and stormwater programs including the SRF program. We also would ask for you to encourage the States to provide at least some portion of the SRF program to be in the form of negative interest or no interest loans and principal forgiveness for disadvantaged communities. This has proved to be a valuable tool for many of our communities and could provide a much-needed financial stimulus to address the most pressing needs that challenge cities.

I wanted to provide some thoughts regarding the legislative proposal and if the authorizing of additional SRF grants to States will be helpful. Additional Federal financial assistance is always welcome, although these amounts are never sufficient to help cities with compliance obligations, and some States do not provide adequate SRF assistance to larger cities. So, while additional capitalization grant amounts are a step in the right direction it is important to keep in mind that this assistance can help us close some of the needs gap, but it has not realized its original goal that it will provide enough Federal aid to cities to comply with the current stringent regulatory regime.

The \$20 billion plus authorization in this proposal—while generous compared to recent history—doesn't come close to filling what EPA described as a need to invest from \$300-\$400 billion in addition to the current \$123 billion a year of local spending to comply with existing law.

- The math suggests that \$20 billion is, unfortunately, perhaps a Federal down-payment on helping cities comply with mandates while providing this public service.
- The math also suggests that if Congress appropriates \$80 billion a year for 5 years the EPA's need gap could be closed.
- So the question is—If Congress doesn't have that kind of money to spend on wastewater systems how does anyone expect local governments to have that level of resources?
- USCM research on a "cost per household" basis reveals that EPA's expectation that utility customers should be able to pay at least 2 percent of Median Household Income to comply with the CWA turns out to range between 2 and 10 percent of income for most households.
- Additionally, the Census reports local government long-term debt is above \$1.8 trillion, and SRF loans simply add to this high level of debt.
- We have serious concerns when our Federal leaders say more local investments are needed to maintain and improve the nation's water quality for our children and grandchildren, but the urging of local government to commit to greater levels of debt will impose that financial burden on those same children and grandchildren. Generational debt is a serious problem because cities have sizable long-term debt, and those children are now suffering from the responsibility to repay student loans.

The lack of resources at all levels of government suggests that our Federal partners should implement the Clean Water Act with flexibility. H.R. 7279 can provide some of that flexibility and recognize the importance of investment in local water priorities. The gaps in funding that continue to be unmet can be addressed if EPA and the States give municipalities greater flexibility, including through the implementation of a vibrant integrated planning and permitting approach.

We urge the Committee to keep a close eye on the reconsideration of affordability assessment. An updated and broader consideration of affordability and the factors that should be included in the analysis and the sorts of criteria to be considered should be transparent and defensible.

CONCLUSION

I would like to thank this subcommittee for holding this hearing today and for your focus to find meaningful ways to reestablish our Federal-State-city partnership and to develop solutions to address our Clean Water Act infrastructure needs. The Conference of Mayors would like to work with you as you move forward on this important endeavor.

[The following materials were provided to the committee and retained in the committee files:

- Mayors' Infrastructure Priorities for the 116th Congress available at: <https://www.usmayors.org/issues/infrastructure/>
- Public Water Cost Per Household: Assessing Financial Impacts of EPA Affordability Criteria in California Cities (November 2014), available at: <https://cacities.org/getattachment/Member-Engagement/Regional-Divisions/Los-Angeles-County/Water-Cost-Per-Household-Report-California-Cities.pdf.aspx>

Mrs. NAPOLITANO. Thank you, Mr. Condon.

Next is Mr. John Mokszycki. You are on, sir.

Mr. MOKSZYCKI. Good morning, Chairwoman Napolitano and members of the committee.

All small rural communities in all of the States are very appreciative for the invitation to testify today about small community wastewater issues, the Clean Water Act, and water infrastructure financing.

I am John Mokszycki. I am the water superintendent for the town of Greenport. It is a small municipality in rural New York on the Hudson River, located in the 19th Congressional District.

We have a population of just over 4,000 people, and an annual budget of \$5.3 million, which includes the operating budgets for both the town's water and sewer utilities.

I want to thank our Representative, Congressman Delgado, for his continued attention and help to all of the municipalities in New York's 19th District, with environmental protection and economic development.

I would also like to thank you, Chairwoman Napolitano and Representatives Young and Katko, for introducing the Water Quality Protection and Job Creation Act of 2019 today. Your legislation is very welcome, especially the provisions to increase funding for the Clean Water State Revolving Fund.

My community and many just like it would not be operating today without the water infrastructure assistance from the State Revolving Funds.

I am testifying today on behalf of all the approximately 12,000 small and rural communities in all States that operate public wastewater utilities through my affiliation with the National Rural Water Association and the New York Rural Water Association.

About 85 percent of the approximately 15,000 public wastewater utilities in the U.S. are in small or rural communities. We have a much more challenging time complying with our Federal Clean Water Act permits and operating complex wastewater treatment systems due to the lack of technical resources in small communities.

While the cost of a small community's water infrastructure may only be a fraction of a larger metropolitan community, the cost per

household is often much higher because we have so few ratepayers to spread out the cost.

Currently our town is under a Clean Water Act enforcement order and struggling to pay for the needed sewer improvements. Our initial sewer system was installed in the 1930s with clay sewer pipe. This pipe cracks easily, which allows rainwater to flow into the collection system.

Back in 2007, we were under a Clean Water Act consent order for violating our sewer permit. Every time we experienced a heavy rain, all of the extra water overwhelmed the treatment plant and resulted in rainwater and sewage discharging to the Claverack Creek, which drains to the Hudson River.

Fixing this situation was estimated to cost the town upwards of \$10 million to build a new and larger treatment plant. This occurred around the same time that Congress passed the American Recovery and Reinvestment Act of 2009. We received a \$9.5 million funding package, which was half for loan forgiveness and half zero-interest loan, which we are still repaying.

The newer sewer plant allowed us to comply with our consent order. However, we still had all of the clay pipes in the ground draining all the excess water during heavy rain events.

For our drinking water utility, we needed to replace the antiquated cast iron waterlines that were installed in the 1930s. These lines are frequently breaking, causing civic and economic disruption.

Before we started to replace the cast iron pipes in 2006, we were experiencing up to 50 line breaks a year, which was affecting just about everyone in our community. Over the past 15 years, we have replaced about 40 percent of our old cast iron lines with \$5.8 million in financing.

In 2014, we were pressured to sign another Clean Water Act enforcement order for sanitary sewer overflows. The failing clay sewer pipes were not overwhelming the sewer plant anymore, but it was causing the sewage water to back up into people's homes.

We have taken a number of steps to comply with our current consent order, and so far we have prevented any reoccurrence of the sewage backups into anyone's home. However, we are still operating under the consent order which may require the lining of additional sections of our faulty clay sewer pipes.

It is likely to cost another \$4.5 million, and most of the community currently thinks they are maxed out on their ability to pay. Raising rates at this time could actually threaten the political stability of the community.

As the committee considers modifications to the SRFs, we urge you to target the Federal funding within the SRFs to the communities and citizens most in need of the Federal subsidies. This evaluation should be made on a per capita analysis that is sensitive to local economic conditions.

In closing, I would like to thank this committee, which is very important to rural and smalltown America. Every Federal dollar that has been granted to the many thousands of small towns to build, expand, and maintain their wastewater infrastructure through the State Revolving Funds was authorized by this committee.

We are grateful to be able to testify today and grateful for the numerous opportunities this committee has provided rural America to testify and be included in the crafting of Federal water environmental legislation.

Thank you.

[Mr. Mokszycki's prepared statement follows:]

Prepared Statement of John Mokszycki, Water Superintendent, Town of Greenport, New York, on behalf of the National Rural Water Association and the New York Rural Water Association

Good morning, Chairwoman Napolitano and members of the committee. All small and rural communities in all of the States are very appreciative for the invitation to testify today about small community wastewater issues, the Clean Water Act, and water infrastructure financing.

I am John Mokszycki and I am the Water Superintendent for the Town of Greenport, a small municipality in rural New York on the Hudson River, located in the 19th congressional District. We have a population of just over 4,000 people and an annual budget of \$5.3 million which includes the operating budgets for both the town's water and sewer utilities. I want to thank our representative, Congressman Delgado, for getting on this very important committee for small communities and for his continued attention and help to all the municipalities in New York's 19th District with environmental protection and economic development.

I would also like to thank you, Chairwoman Napolitano, and Representatives Young and Katko for introducing the "Water Quality Protection and Job Creation Act of 2019" today. Your legislation is very welcome, especially the provisions to increase funding for the Clean Water State Revolving Fund. My community and many just like it would not be operating today without the water infrastructure assistance from the State revolving funds.

I am testifying today on behalf of all the approximately 12,000 small and rural communities in all States that operate public wastewater utilities through my affiliation with the National Rural Water Association and the New York Rural Water Association. About 80 percent of the approximately 15,000 public wastewater utilities in the U.S. are in small or rural communities. Small and rural communities have a much more challenging time complying with our Federal Clean Water Act permits and operating complex wastewater treatment systems due to the lack of technical resources in small communities. While we have fewer resources, we are regulated in the exact same manner as a large community. While the cost of a small community's water infrastructure may only be a fraction of a large metropolitan community, the cost per household is often much higher because we have so few ratepayers to spread out the cost. Similarly, the compliance burden of Clean Water Act is more severe because we don't have the same technical resources as large communities. Many small communities may only have one operator with multiple duties, not just wastewater treatment—and we don't have staff engineers, compliance officers and attorneys to help with compliance. But we still have to stay current with all the new rules, maintain our treatment and collection systems, and manage our very complex Federal sewer permits (i.e. the National Pollution Discharge Elimination System permit).

My main objective here today is to show you, through the experience in the Town of Greenport, that small communities are struggling with the burden of maintaining our wastewater infrastructure, that compliance is very expensive, that it is very complex, and that nobody wants to comply with the Federal environmental standards, protect our community and protect the environment more than local governments.

Currently, our town is under a Clean Water Act enforcement order or consent order and struggling to pay for the needed sewer improvements which I will explain after providing a brief history of our situation.

Our initial sewer system was installed in the 1930's in large part by the depression era Works Progress Administration and Civilian Conservation Corps initiatives which trenched and laid 64,000 feet of clay sewer pipe or tile. This type of pipe, although now antiquated, cracks easily which allows rain water to flow into the collection system in the cracks and also in the joints between the 6 foot sections.

In order to modernize our collection system and keep all the rainwater from entering (i.e. infiltration), we need to insert a modern material into the old pipe which expands and seals the existing lines. This is called slip-lining and it is very expen-

sive. However, it less expensive and disruptive than the alternative of excavating and replacing all the old pipes which would include digging up the entire town, all the roads, and people's yards. In 1996, we started slip-lining our sewer lines and to date we have slip-lined about 1/3 of our clay tile collection system for approximately \$1,000,000 which we are still repaying. It is estimated that slip-lining the remaining clay pipes will cost approximately \$4.5 million.

Back in 2007, we were under a Clean Water Act consent order for violating our sewer permit—largely as a result of all the rainwater infiltration from our clay pipes. A town typically does not feel pressured to sign a consent order unless they are in very severe violation of their Clean Water Act permit and, at that time, we were in severe violation. Our clay pipe-based sewer collection system was collecting and sending tremendous amounts of “extra” water to our central sewer plant every time it rained. The clay pipes themselves allowed much of the rain to infiltrate the system through cracks and failed joints. In addition, many of the homes in the town had their sump pumps, roof gutters, household drains, and every one of their yards' drainage systems to be connected to the sanitary sewer pipes. Every time we experienced a heavy rain, all the extra water overwhelmed the treatment plant and resulted in rainwater and sewage bypassing our treatment works and discharging to the Claverack Creek which drains to the Hudson River. In addition to the problem of the treatment bypass, the excess flow would also wash out all the biological processes that are needed to treat our sewage during normal flows and this would take a number of days to re-establish after any heavy rain event.

Fixing this situation was estimated to cost the town upwards of \$10 million to build a new and larger treatment plant. That was financially impossible for us. However, lucky for us, this occurred around the same time that Congress passed the American Recovery and Reinvestment Act of 2009. The funding provided to the Clean Water State Revolving Funds from the Act was used to fund our new sewer system. We received a \$9.5 million funding package which was about half for loan forgiveness (i.e. a grant) and the other half was a zero interest loan which we are still repaying. This funding package did result in water rate increases but the amount was feasible for the community to absorb. In addition to expanding the capacity of our treatment plant, we were also able to modernize our treatment process with a sequential batch reactor system and the use of ultraviolet light disinfection.

The new sewer plant allowed us to comply with our consent order; however, we still had all the clay pipes in the ground draining all the excess water during every heavy rain event. Additionally, at that time, we had up 50 line breaks each year in our antiquated and deteriorating cast iron drinking water lines which needed replacement. Also, keep in mind that the town supervisors were facing all the financial challenges of the water system in addition to other community needs like roads, bridges, parks, schools, etc.

In 2014, not long after financing and building our new \$9.5 million sewer plant, when the community supervisor believed that water rates were high, when we were still struggling to fund replacement of our drinking water cast iron lines and when we needed a new drinking water filtration plant—we were pressured to sign another Clean Water Act enforcement order for sanitary sewer overflows or SSOs. All the rain water infiltration into the failing clay sewer pipes was not overwhelming the sewer plant anymore, but it was causing the sewage water to back up into people's homes, 26 homes to be exact—and as you can imagine, this results in a crisis in town for the individuals whose homes are impacted, for the town to respond and for our local political leaders. By the way, our town board of supervisors holds a monthly town public meeting which includes an opportunity for the public to speak out about their expenses and their ability to pay their water bills. Around this time, our State environmental agency presented the town with a second consent order to fix the sanitary sewer overflows which we signed to avoid the threat of very costly fines. We have taken a number of incremental steps to comply with our current consent order including installing backflow preventers in every home vulnerable to a backup, and separating the rainwater drainage from all the vulnerable houses to the sewer system (sump pumps, household drains, gutters, etc.). We did line about one-third of the clay sewer pipes and are still paying off that debt. So far, we have prevented any re-occurrence of the sewage backup into anyone's home. However, we are still operating under the consent order which may require the lining of additional sections of our faulty clay sewer pipes. This is something we want to do and needs to happen, but it is likely to cost another \$4.5 million and most of the community currently thinks they are maxed-out on their ability to pay. Raising rates at this time could actually threaten the political stability of the community.

Compounding our problems is the fact that the needs of our wastewater utility also competes with our drinking water needs. For our drinking water utility, we need to replace the antiquated cast iron water lines that were installed in the

1930's. These lines are frequently breaking, causing people to be without drinking water as well as civic and economic disruption. Before we started to replace the cast iron pipes in 2006, we were experiencing up to 50 line breaks a year which was affecting just about everyone in the community. Over the past 15 years we have replaced about 40 percent of our old cast iron lines with \$5.8 million in financing. This dramatically reduced the frequency of emergency line breaks to approximately 10 line breaks a year. Our annual debt payment is approximately \$400,000 per year for water alone. In June, we will be starting a drinking water line replacement project to replace approximately 14,000 feet of old water lines at a price of \$4.6 million. This will add about \$245,000 to our annual debt service. The replacement cost for the rest of the lines needing replacement (30,000 feet) is estimated to cost an additional \$11 million. In addition to modernizing all the old lines, we also need a new pump, new pump house and a iron and manganese filtration system that will cost another \$1.5 million.

Our water and sewer rates have been climbing over the past few years to the point where many people in the community, especially our low and fixed income citizens, are struggling to pay their bills. Financing our water infrastructure has also resulted in increasing the property tax rates. The average family water bill is over \$100 a month and we are not a wealthy community.

In the 2010 census, the median income for a household in the town was \$37,394, and the median income for a family was \$47,452. Much of the town's historic industry moved away in the 1980's including three cement plants, a match factory, a Canada Dry bottling facility, and other businesses.

The current debt service for our drinking water utility is \$6.8 million with annual payments of approximately \$400,000. This does not include the new project beginning in June as financing has not been finalized. The debt service for the sewer utility is \$4.6 million with an annual payment of approximately \$250,000.

Most of the financing for water infrastructure repairs and replacements including the partial replacement of our water lines and sewer lines, the construction of a new wastewater treatment plant, and the abatement of our sanitary sewer overflows has only been made possible with funding from the Clean Water State Revolving Fund (SRF) and we are very grateful to this committee for that funding. And only because of the loan forgiveness and zero interest loan provisions with the program were we able to make the financing work for the citizens of Greenport. Again, thank you for including those critical assistance provisions that make the SRFs work for small and rural communities.

As the committee considers modifications to the SRFs, we urge you to retain these provisions and continue to target the Federal funding within the SRFs to the communities and citizens most in need of the Federal subsidies through the following provisions:

First, local communities have an obligation to pay for their water infrastructure and the Federal Government should only subsidize water infrastructure when the local community can't afford it and there is a compelling Federal interest such as public health or compliance. To the maximum extent possible, the State revolving loans should prioritize funding to the communities most in need based on their economic challenges combined with the public health necessity of the project. This evaluation should be made on a per capita or impact per citizens (ratepayer) analysis that is sensitive to local economic conditions (i.e. affordability analysis).

Second, communities out of compliance with the Clean Water Act should receive prioritization for SRF funding where the most severely in non-compliance (environmental and economic) are moved to the top of the list for funding.

Third, a small percentage of water funding programs should be set-aside for technical assistance and assistance to complete the applications for water infrastructure funding. Small communities often lack the technical and administrative resources to achieve compliance and complete the necessary applications to access the Federal funding programs. Providing these small communities with shared technical resources allows small communities access to technical resources that large common communities have and are needed to operate and maintain water infrastructure, comply with standards in the most economical way, and obtain assistance in applying for State revolving loan funds. Often, this assistance saves thousands of dollars for the community and keeps the systems in long-term compliance with EPA rules.

Fourth, allow infrastructure funds some ability to provide grants (i.e. loan forgiveness and zero interest financing)—not just loans. Commonly, low-income communities do not have the ability to pay back a loan, even with very low interest rates, and require some portion of grant or principal forgiveness funding to make a project affordable to the ratepayers.

Fifth, a minimum portion of the funds should be set-aside for small and rural communities. This ensures that any infrastructure program must set-up a process

for dealing with small and rural communities. Once established, local pressures and priorities will determine the actual portion directed to small systems which we expect will often be greater than the minimum prescribed.

In closing, I would to thank this committee which is very important to rural and small town America; every Federal dollar that has been granted to the many thousands of small towns to build, expand, and maintain their wastewater infrastructure through the State revolving funds was authorized by this committee. Also, every Federal regulation under the Clean Water Act was likewise authorized by this committee. We are grateful to be able to testify today and grateful for the numerous opportunities this committee has provided rural America to testify and be included in the crafting of Federal water and environmental legislation.

Mrs. NAPOLITANO. Thank you very much for your testimony.

Ms. Flowers.

Ms. FLOWERS. Thank you, Chairwoman Napolitano, Chairman DeFazio, Ranking Member Graves, Ranking Member Westerman, and members of the committee for the opportunity to testify.

My name is Catherine Coleman Flowers. I am the rural development manager for the Equal Justice Initiative in Montgomery, Alabama. I am also a practitioner in residence at the Franklin Humanities Institute at Duke University and a senior fellow at the Center for Earth Ethics and the founder of The Alabama Center for Rural Enterprise.

I grew up in Lowndes County, Alabama, which is located along the route from Selma to Montgomery. As a child in the 1960s and 1970s, I used an outhouse and a slop jar before my family eventually installed indoor plumbing.

I left the area to achieve an education, and upon returning to Alabama in 2000, I was surprised at the disparities that still existed in rural wastewater treatment.

Since 2002, I have visited homes with wastewater failures at all levels. I first began meeting with people about this problem in the early 2000s as a pastor. A pregnant woman and other members of the community were being threatened with or actually arrested for not being able to afford on-site wastewater treatment.

Yes, it is a crime in this country if you cannot afford wastewater treatment. Many of the community members have resorted to unpermitted alternate methods like straight-piping to discharge raw sewage from their homes or disconnecting failing septic systems to keep the sewage from coming back into their homes.

And while the arrests have decreased, the threat remains. I have visited homes with on-site systems that fail each time it rains, and the sewage comes back into the homes either through the toilet, bathtub, or both.

In one town, citizens pay a wastewater treatment fee. Yet they still have sewage backing up into their homes and yards.

A neighborhood is bordered by a sewage lagoon, a cheap solution generally used in poor rural communities. In addition to the stench from the lagoon, their tanks must be pumped as often as three times a week to remove sewage from their yards or their homes.

Children are unable to play in their yards due to raw sewage on the ground. This is not what people expect to see in the United States.

In 2009, I was bitten by mosquitoes swarming a pool of raw sewage. My body broke out in a rash that doctors could not identify.

I later reached out to Dr. Peter Hotez of the National School of Tropical Medicine in Texas, which culminated in a peer reviewed

study that was published in 2017. This study found that over 30 percent of Lowndes County residents that tested were found to have hookworm and other tropical parasites long thought to have been eradicated in the United States.

Inadequate wastewater treatment is not just a Lowndes County or an Alabama problem. It is estimated that more than 20 percent of the country uses on-site wastewater treatment, reaching 40 percent or more in areas with large rural populations.

Up to half of the septic systems in the U.S. do not work properly or fail at some point. By some estimates, 60 percent of the land in the U.S. cannot support septic systems. It is time for Congress to act to address this widespread problem, beginning with acknowledging the problem more broadly, gathering more information, especially through the census, and eliminating policies that criminalize residents for being unable to afford wastewater treatment.

In addition, I invite all of you to visit Lowndes County so you can witness the problem firsthand, but also talk to your own rural constituents because some of these same problems are in all rural areas.

Congress should further use its oversight powers to ensure that investments in addressing this problem are meaningful. Specifically, it is critical that funding should take into account the realities of climate change, community input, and the unique geography of an area.

Funding must also go to those who need it most and cannot afford wastewater treatment or upgrades without assistance.

And finally, if Federal funding is used to continue to design and permit failing systems, the State entities that approve these systems should be held accountable instead of the individual homeowners.

The Clean Water State Revolving Fund is an excellent tool to help communities with much needed wastewater upgrades, but to truly be effective, it needs the flexibility to reach the people who need it the most. Rural communities should no longer be left behind. Congress must begin addressing this problem now, while also looking at technological solutions for the new future of wastewater.

If we can treat wastewater in outer space, it is not unrealistic to see a time when one can go to a hardware store and purchase an on-site wastewater treatment system. This is an opportunity to remove the shame associated with discussing wastewater treatment failure and instead focus on sustainable solutions that provide meaningful investment.

Thank you for the opportunity to be here today, and I look forward to answering any questions.

[Ms. Flowers' prepared statement follows:]

**Prepared Statement of Catherine Coleman Flowers, Rural Development
Manager, Equal Justice Initiative, Montgomery, Alabama**

Thank you, Chairwoman Napolitano, Ranking Member Westerman, and all of the members of the committee for the opportunity to testify. My name is Catherine Coleman Flowers. I am the rural development manager for the Equal Justice Initiative in Montgomery, Alabama. I also serve as practitioner in residence at the Franklin Humanities Institute at Duke University, a senior fellow at the Center for Earth

Ethics, and I am the founder of the Alabama Center for Rural Enterprise, which has a mission of targeting the root causes of poverty.

I am a country girl, having grown up in Lowndes County, Alabama. Lowndes County is located along the road from Selma to Montgomery. As a child in the 1960's and 70's, I used an outhouse and slop jars. My family eventually installed a cesspool which facilitated us having functioning indoor plumbing. I left the county after graduating high school and when I returned in 2000, I was surprised at the disparities that still existed in wastewater treatment. In 2002, I invited Robert Woodson of the National Center for Neighborhood Enterprise to Lowndes County to see firsthand the problems residents were experiencing. During that trip, we visited the home of a family that had been threatened with arrest for having a failing septic system. As we approached the home, we could see the raw sewage running down the road from the septic tank. A man approached us as we were walking up the road, crying. He had been threatened with arrest and was told he could no longer hold worship services at his church because he did not have a septic tank. Mr. Woodson called William Raspberry, a Pulitzer Prize winning columnist with the Washington Post, who wrote a syndicated column about the arrests, which was the first time that I can recall there being any media attention regarding this problem. This was 2002, just 17 years ago.

These arrests have since decreased, but the threat remains.

The Black Belt region of Alabama, where Lowndes County is located, is particularly affected by the lack of adequate sanitation services because the clay-like soil, which worked well for growing cotton during the slavery and sharecropping eras, makes it extremely difficult to install septic systems. Over half of the region is unsuitable for conventional septic systems, meaning that failing septic tanks are common.

Most of the soil in Lowndes County requires a more complex type of septic system, which can cost up to \$30,000 depending on the site conditions.¹ Yet the median household income in Lowndes County, for example, was only \$27,000 in 2016, making more costly systems out of reach and leading to more people relying on unpermitted systems, after their septic tanks repeatedly fail. Families that cannot afford to install septic systems must use some alternative method to dispose of waste without treatment, such as a straight pipe. Straight pipes are generally metal, or PVC pipes connected to the home's plumbing that discharge raw, untreated sewage directly into their yards, ditches, woods, or various surface waters. In 2011, the Alabama Department of Public Health estimated that in Lowndes County, 40–90 percent of homes have no septic system or an inadequate one, and 50 percent of homes with septic systems are failing.²

Affordability is a primary reason poor families in Lowndes County do not have expensive engineered systems needed to treat wastewater onsite in Black Belt soils. However, over the course of my career and my work in the community, I began to discover that cost was only part of the issue: failing systems remains a larger burden, one that comes along with impacts like disease and illness. For example, when a member of the community approached me around 2014 and said he could afford any system, yet he could not find one that actually worked. I quickly learned that the problem is much larger than just failing septic tanks and straight piping. Since 2002, I have visited homes with systems that fail each time it rains and the sewage comes back into the house through either the toilet, bathtub, or both. Some families have had numerous insurance claims because of failed systems. In one town, citizens pay a wastewater treatment fee to a management entity, yet they still have sewage backing up into their homes and yards. Another neighborhood is bordered by a sewage lagoon which is full of raw sewage. Septic tanks are connected to pipes that take their effluent to the lagoon. However in addition to the stench from the lagoon, their tanks must be pumped as often as three times a week to remove sewage from their yards or their homes. Charlie Mae Holcombe, a resident of Lowndes County, recently walked from her home to the street to tell former Vice President Al Gore and Bishop William Barber about the problem she has experienced for more than 20 years.³ Holcombe can't let her grandchildren play outside due to the sewage

¹ Patricia Jones & Amber Moulton, *The Invisible Crisis: Water Unaffordability in the United States* (May 2016), at http://www.uusc.org/sites/default/files/the_invisible_crisis_web.pdf.

² 2011 U.N. Report, *supra* n. 5, at 7; Apple Loveless & Leslie Corcelli, *Pipe Dreams: Advancing Sustainable Development in the United States*, EPA Blog (Mar. 5, 2015), <https://blog.epa.gov/blog/2015/03/pipe-dreams-advancing-sustainable-development-in-the-united-states/>.

³ Shah, Khushbu, "Al Gore admits US poverty 'shocking'—but warns climate crisis will make things worse," *The Guardian* (February 22, 2019), <https://www.theguardian.com/us-news/2019/feb/22/al-gore-alabama-environmental-justice-climate-worse>.

outside their home and has had to replace her carpet countless times due to the sewage that has run into the house. The families I speak to, including Mrs. Holcombe's, also regularly complain about illnesses. Living with repeated exposure to raw sewage causes acute and chronic health impacts and reduces families' standard of living. Short-term exposure to parasites, bacteria, and viruses in raw sewage can cause infections or diarrhea and have also been linked with long-term health impacts such as cancer, dementia, and diabetes.⁴

With longer periods of warm weather, mosquitoes are more common in the fall and winter months. In October 2009, I was asked by State of Alabama Health Department officials to meet them at a home of a pregnant woman who had been threatened with arrest for not having a septic system. She lived in a singlewide mobile home. Behind her home was a pool of raw sewage that ran into a pit. It was teeming with mosquitoes. I was bitten by mosquitoes and had bites all over my legs. Shortly thereafter, my body broke out in a rash. Seeking medical care, my blood tests came back negative, providing no clue for the raised rash that covered most of the trunk of my body and was sporadically on my legs and arms. That was when I asked if it was possible that I had something American doctors were not trained to look for.

The conditions in Lowndes County are not what people expect to see in the United States. Problems occurring in rural communities are far from the major media centers and often go unnoticed. In August 2012, I read an op-ed in *The New York Times* written by Dr. Peter Hotez, the founding dean of the National School of Tropical Medicine at Baylor's School of Medicine, entitled, "Tropical Diseases: The New Plague of Poverty."⁵ I googled him and found an email. We met a brief time later and from these meetings, came up with the idea for a study to look for hookworm and other tropical parasites (which had long been thought to have been eradicated from the U.S.) in stool samples, soil samples, water samples and blood samples in Lowndes County. In September 2017, our peer-reviewed study was published. The study found that 34.5 percent of participants tested positive for hookworm and other tropical parasites in Lowndes County.⁶ Hookworms are not deadly, but can cause delays in physical and cognitive development in children. I want to repeat an earlier statement: we once believed hookworm had been eradicated from the U.S. Our peer-reviewed study found that over 30 percent of samples from Lowndes County tested positive for hookworm.

What we have concluded is that in many instances current onsite septic systems and some small package systems are not working correctly, even after large expenditures by homeowners. Cheap lagoon systems are used generally in poor or rural communities. This is not just a Lowndes County or an Alabama problem. I have heard of examples of these type of failures across the United States. For example, in South Florida, more and more septic systems are vulnerable to failure due to climate change. A recent study has found that by 2040, due to sea level rise, 64 percent of Miami-Dade County's septic systems could harm people's health and water supply.⁷ In California, problems have also been reported. For example, according to documentation by Self-Help Enterprises, 42 percent of respondents in one community in Bakersfield have experienced septic system issues. More broadly, it is estimated that more than 20 percent of the country uses onsite wastewater treatment, and this percentage reaches 40 percent or more in some States with large rural populations like North Carolina, Kentucky, South Carolina, Maine, Vermont, and New Hampshire.⁸ Up to half of conventional septic systems in the U.S. function improperly or fail completely at some point in their expected lifetime. By some estimates, 65 percent of the land in the U.S. cannot support conventional septic systems.⁹

In December 2017, the U.N. Special Rapporteur on Extreme Poverty and Human Rights visited Lowndes County at my invitation, as part of a tour of the U.S. In

⁴West Virginia Public Broadcasting, *Inside Appalachia: Water in the Coalfields*, <http://wvpublic.org/post/inside-appalachia-water-coalfields#stream/0>.

⁵Hotez, Peter, "Tropical Diseases: The New Plague of Poverty," *The New York Times* (August 18, 2012), <https://www.nytimes.com/2012/08/19/opinion/sunday/tropical-diseases-the-new-plague-of-poverty.html>.

⁶McKenna et al., *Human Intestinal Parasite Burden and Poor Sanitation in Rural Alabama*, *Am. J. of Tropical Medicine and Hygiene* (Sept. 2017) ("McKenna et al."), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5817782/pdf/tpmd170396.pdf>.

⁷Miami-Dade County Department of Regulatory & Economic Resources, *Miami-Dade County Water and Sewer Department, & Florida Department of Health in Miami-Dade County (Dr. Samir Elmir), Septic Systems Vulnerable to Sea Level Rise* (November 2018), <https://www.miamidade.gov/green/library/vulnerability-septic-systems-sea-level-rise.pdf>.

⁸U.S. EPA, *Septic Systems Overview*, <https://www.epa.gov/septic/septic-systems-overview>.

⁹Richard Siddoway, *Alternative Onsite Sewage Disposal Technology: A Review* (Jan. 1988), Washington State Institute for Public Policy, <http://www.wsipp.wa.gov/ReportFile/1131>.

a statement, the Special Rapporteur, Philip Alston, noted: “In Alabama, I saw various houses in rural areas that were surrounded by cesspools of sewage that flowed out of broken or non-existent septic systems. The State Health Department had no idea of how many households exist in these conditions, despite the grave health consequences. Nor did they have any plan to find out, or devise a plan to do something about it.”¹⁰ The nonprofit organization I founded, Alabama Center for Rural Enterprise, has since filed a Title VI complaint with the Department of Health and Human Services, alleging that the Alabama Department of Public Health and Lowndes County Health Department have for decades been placing an adverse impact on the health and well-being of the black community of Lowndes County for failing to address this problem. The Department of Health and Human Services is currently deciding whether to investigate this complaint.

It is time for Congress to act to address this widespread problem that rural communities across the country face. In order to meaningfully address the issue of inadequate onsite wastewater, a comprehensive approach must be taken.

As a baseline, there needs to be an acknowledgement of this problem more broadly. It has only been recently that we have begun to garner attention in the media about the lack of adequate wastewater options for some communities, but for years Lowndes County residents largely suffered in silence, and many across the country continue to do so. Members of Congress should talk to their rural constituents to find out where there may be lack of adequate wastewater services in their districts.

Local and State authorities, and to the extent they can, Federal authorities, also need to eliminate laws, policies, and practices that criminalize residents for their failure to comply with wastewater regulations, even when the cost to do so is substantially higher than their means.

We need more information on where people are living without access to sanitation and wastewater services, as well as on individuals who pay a wastewater treatment fee to a management entity and yet still have sewage backing up into their homes. The Rural Community Assistance Partnership estimated that more than 1.7 million people in the United States lack access to basic plumbing facilities¹¹ and EPA estimates that more than one in five families in the U.S. are served by decentralized wastewater.¹² This is only an estimate, however, as most States do not have an inventory of where septic systems are located. The U.S. Census once captured information regarding whether homeowners were served by municipal treatment or a septic system, but the question regarding household sewage treatment was taken off after the 1990 census. As a first step, that question should be added back to the Census to begin compiling data once again to illustrate the scope of this problem.

Congress should use its oversight powers to ensure that investments are meaningful, distributed equitably, and the agencies and engineers approving the use of the funds are ultimately accountable if a system fails.

- Funding should take into account the realities of climate change, as more rainfall and extreme weather due to climate change is likely to only stress these systems more. Funding must also take into account community input and the unique geography of an area. For example, the soil in Lowndes County and across the Black Belt creates unique challenges that other communities may not face.
- Funding also must go to those who need it most and cannot afford wastewater services or upgrades without assistance.
- And finally, Congress should ensure that individual homeowners are not responsible if the system that was approved for installment on their property, especially one that is installed using Federal funds, fails due to geographic, soil, or other conditions outside of their control.

The Clean Water State Revolving Fund is an excellent tool to help communities with much-needed wastewater upgrades, but to be the most effective it needs the flexibility to reach the people who need it most.

Although addressing the problem of inadequate wastewater and its roots in poverty and oppressive policies is complex, it must be done. Congress must begin addressing this problem now, while also looking at technological solutions for the new future of wastewater. This is an opportunity to remove the shame associated with

¹⁰United Nations Human Rights, Office of the High Commissioner, Statement on Visit to the USA, by Professor Philip Alston, United Nations Special Rapporteur on extreme poverty and human rights (December 15, 2017), <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=22533&LangID=E>.

¹¹Rural Community Assistance Partnership, Still Living Without the Basics in the 21st Century: Analyzing the Availability of Water and Sanitation Services in the United States, at <https://rcap.org/wp-content/uploads/2017/05/Still-Living-Without-the-Basics-Water.pdf>.

¹²U.S. EPA, Septic Systems Overview, <https://www.epa.gov/septic/septic-systems-overview>.

discussing wastewater treatment failures and instead focus on sustainable solutions that consider community input, offers assistance to those who need it most, and provides meaningful investment in wastewater that actually helps people, rather than causing further harm.

ATTACHMENT: HUMAN INTESTINAL PARASITE BURDEN AND POOR SANITATION IN RURAL ALABAMA

The report is retained in the committee files and available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5817782/pdf/tpmd170396.pdf>

Mrs. NAPOLITANO. Thank you very much for your testimony.

Next we have Ms. Maureen Taylor. You are on.

Ms. TAYLOR. Good morning, Chairwoman Napolitano and members of the committee.

My name is Maureen Taylor, and I bring you greetings from Michigan Welfare Rights where I am honored to serve as the State chairperson of that organization.

And I want to say at the outset we are so pleased that we were included in an opportunity to address these issues relative to how to manage water and water problems.

Epic changes in the relationship between working people and the world over and traditional means of survival have altered the progress of humanity permanently. Since the age of industrialization, blue collar America has only known one process of existence. You work. You earn a paycheck. You spend it on those things you need to continue to live. You run out of money. So you go back to work. This is the cycle that repeats itself.

Cities like Cincinnati, Chicago, Gary, Flint, Highland Park, Pontiac, Detroit and others have all similar histories which have been tied to these locations and industries that require mass numbers of laborers.

Detroit's nearby communities built cars for the world, and that world was connected to automobile manufacturing and all of the ancillary items required to keep that industry thriving. In 1914, when Henry Ford advertised the first \$5 a day opportunity for those willing to work on his assembly line, blue collar workers, especially those in unions, established a pattern for the Nation to follow: 8-hour days, extra pay on weekends, holiday pay, time off for vacation, health care benefits, academic benefits, et cetera.

Municipals, schools, and most other employers duplicated contracts that mirrored employee-employer relationships and negotiations set in factories. The quality of life for millions of us has been tied to those relationships from 1914 to 1984, just over 70 years.

Standard of living for working people started to change in small, imperceptible ways in the mid-1980s that was coupled with population declines forced by massive losses of high-paying jobs. With the onset of high-tech manufacturing methods, the die was cast and Detroit went from 1.9 million residents to just over 700,000 today.

With the population on the move, why keep so many schools open? Why keep hospitals open? Why keep opportunities available for people that will never find a job again?

In 2014, the Detroit Water Department started the most recent and egregious campaign of mass water shutoffs that targeted only low-income residential customers who were 2 months behind in payments or \$150 in arrears.

In June of that year, we started to hear rumors about something happening in a place called Flint, Michigan. Poisonings were going on, and the word started to come out. In the end of the program, both of these issues marked the genesis of long nights of terror for blue collar workers, a night that has not yet ended.

Despite multiple levels and battles to stop these draconian practices, residents have not been able to stop the moral bankruptcy of water shutoffs or even water poisoning. We are left to create methods of survival as the only option for Detroit, for Highland Park, for Flint, and for other cities and communities across the country who are facing shutoffs.

In early 2014, the initial numbers shared with us that were being targeted for mass water shutoffs were 59,990 addresses. Since those days, Detroit has seen upwards of 100,000 disconnections.

Possible solutions include these suggestions:

A federally mandated opportunity to establish uniform policies on water and sewage affordability based on each residential customer's ability to pay;

A Federal dedicated source of funding to the Drinking Water State Revolving Fund and a renewal of the Build American Bonds Program to address aging water and sewage infrastructure issues.

In the end, in Detroit especially, the only thing I can say is that I do not live in a bankrupt city. I live in a city that has been bankrupted. We need you to help us to stop water shutoffs. We need you to help us restore all water services and then determine individual eligibility. And then we need you to help create a private and a public water policy and procedure.

In the end, I want to thank you so very much for the opportunity to share a little bit about the misery that we have been going through, and I am going to go further.

I would like it if some of you that are here today might consider assigning someone from your offices to work directly with us.

Thank you so much.

[Ms. Taylor's prepared statement follows:]

**Prepared Statement of Maureen Taylor, State Chairperson, Michigan
Welfare Rights Organization, Detroit, Michigan**

MICHIGAN/GROUND ZERO WATER CRISIS

Good Morning Chairman Defazio, Ranking Member Graves and members of the committee. My name is Maureen Taylor and I am the State Chairperson for the Michigan Welfare Rights Organization a State chapter of the National Welfare Rights Union which advocates for public assistance recipients and low-income people. The Michigan Welfare Rights Organization works to build a social movement by bringing together people directly affected by water problems, grassroots leaders, community attorneys, researchers, educators, artists, and policymakers to strategize on solutions provide clean, healthful water regardless of income. Thank you for the opportunity to testify today to share a bit about the water affordability challenges facing citizens in the State of Michigan, particularly the city of Detroit and offer a few suggested solutions.

The epic changes in the relationship between working people the world over and the traditional means of survival have altered the progression of humanity permanently. Since the age of industrialization, blue-collar America has only known one process of existence—you work, you earn a paycheck, you spend it on those things you need to live, you run out of money, so you return to work—the cycle repeats. Cities like Cincinnati, Chicago, Gary, Flint, Highland Park, Pontiac, Detroit and

others all have similar histories which have tied these locations to industries that required massive numbers of laborers.

Detroit, and near-by communities, built cars for the world and that world was connected to automobile manufacturing and all the ancillary items required to keep that industry thriving. From 1914 when Henry Ford advertised the first \$5/day opportunity for those willing to work on the assembly line, blue-collar workers especially those in unions established a pattern for the Nation to follow . . . 8-hour days, extra pay on weekends, holiday pay, time off for vacations, healthcare benefits, academic benefits, etc. Municipal, school, and most other employees duplicated contracts that mirrored employee/employer negotiations set in factories. The quality of life for millions have been tied to these relationships from 1914 to 1984 . . . just over 70 years.

The standard of living for working people started to change in small, imperceptible ways in the mid-1980's that were coupled with population declines forced by massive losses of high-paying jobs. With the onset of hi-tech manufacturing methods, the die was cast. Detroit went from 1.9 million residents to just over 700,000 today. With the population on the move, why keep so many schools open or teachers working since millions will never need basic educational skills ever again? With the population on the move, why maintain the notion that people are entitled to affordable housing since most will not be needed at work? With the population on the move, why not tie healthcare, or public transportation, or simple community safety, or access to clean water and sanitation to the notion that these items must be paid for? The concept of access to clean water and sanitation even for the poorest among us, has always been a "common" viewed as something owned by humanity as a rule. It appears that the new rule allows for the "torture" of working people who live on fixed incomes that normalizes mass water shutoffs as part of the "new normal".

In 2014, the Detroit Water and Sewerage Dept. started the most recent and egregious campaign of mass water shutoffs that targeted only low-income, residential customers who were 2 months behind in payments or \$150 in arrearages. In June of that year, rumors started to surface about poisoned public water in Flint, MI. Both issues marked the genesis of long nights of terror for blue-collar workers, a night that has not yet ended. Such practices were not new to those in the American "rust-belt" but never before had the ferocity and scale reached such depths.

When the Detroit Water and Sewerage Department began this aggressive campaign, The Michigan Welfare Rights Organization (MWRO) established a water shutoff water hotline to try to assist citizens who were threatened with water shutoff. We received forty or more calls per hour regarding water shut offs. As part of our work we have seen children living in homes without water. Parents with children, whose water services are terminated, fear Child Protective Services because if Child Protective Services is notified, it can result in a child or children being removed from their home. We saw this happen in a case where a Detroit Water and Sewerage Department customer who lost her job, had her water shut off; and then her children were taken and placed in foster care by social services. The situation in Detroit is untenable, I have personally assisted with moving families into homeless shelters or church basements to obtain temporary shelter until water is restored.

Despite multi-level battles to stop these draconian practices, residents have not been able to deter the moral bankruptcy of water shutoffs or water poisonings. Attempts to "privatize" what has always been a "public common" held in trust has only been slowed. The city of Detroit is focused on re-classifying access to clean water and sanitation as a commodity to be bought and sold, supported by the notion that if you can't pay for it, residents can't have it . . . SCANDALOUS! The city of Highland Park, a suburb of Detroit, was first to feel the pain of "water privatization" attempts that came on the heels of that community losing more than 50 percent of its population. Elected officials have no other answer. All elected officials, all genders, all party affiliations, and all nationalities label then sell-off city assets that once belonged to the people as a means to balance the financial books during challenging economic times. The falsely declared "bankruptcy" in Detroit sealed our fate and made city assets open game to having these re-classified items to be sold. I don't live in a bankrupt city . . . I live in a city that was bankrupted!

In early 2014, the initial numbers being targeted for mass water shutoffs was 59,990. Since those days, Detroit has seen upwards of 100,000+ disconnections. We have been left with no choice but to fight for our lives as we try to envision what a different kind of world might look like that won't punish poor people because they are poor!

To be threatened with shutoff, a household must be 2 months behind in payments, or merely \$150 in arrears . . . SCANDALOUS!! When water is turned off, neighborhood issues surface. When water is turned off, children can be removed from the

household and placed in foster care. When water is turned off, infectious diseases increase connected to the buildup of surface algae and other contaminants that grow on the inside of water pipes surface and are passed from household to household. No one hears our cries, no one sees our tears.

We are left with creating methods of survival as the only option for Detroit, for Highland Park, for Flint and for the other cities and townships across the country who are facing shutoffs. The government answer to how to treat poor people, poor children, poor retirees, poor disabled persons, and poor veterans is to deny access to clean water. God Bless America, Land That I love . . .

As possible solutions I offer the following suggestions which our coalition has shared at previous hearings and in written testimony:

- A Federal mandate to establish a uniform policy on water and sewerage affordability, based on each residential customer's ability to pay.
- A Federal dedicated source of funding to the Drinking Water State Revolving Fund and renew the Build America Bonds Program to address aging water and sewerage infrastructure, which is but one of the reasons for rising costs, passed on to residential customers.
- Federally funded bill payment assistance for those with the lowest incomes that pay a high proportion of household income for home energy to meet their immediate need for home energy
- Federal consumer protections for water service, including shutoff procedures that require sufficient notice, shutoff prohibitions for vulnerable households with minor, elderly, pregnant, or disabled persons, and water quality.

Recommended solutions specific to Detroit, Michigan include:

- Stop all water and sewerage shutoffs until DWSD has implemented policies and procedures addressing shutoffs by implementing the original Detroit Water Affordability Plan (2005) created by expert Roger Colton.
- Immediately assess of the number of Detroiters living in homes without water, including a survey of the number of children, disabled, elderly and other at-risk citizens, with a review of public health and safety issues.
- Restore all water service and then determine eligibility for assistance programs, in one stop, including Federal and State assistance. Only if it is determined that the person has the ability to pay, but has not, will the water and sewerage services be terminated.
- Create a comprehensive DWSD Policy and Procedure for shutoff of residential and commercial accounts.
- Declare an amnesty on Detroit criminal prosecutions for "alleged water thief"; instead evaluate these Detroiters for financial assistance based on what Detroiters can afford to pay. Turn an alleged criminal into a contributor.

Again, thank you for the opportunity to share a bit about the water affordability challenges facing citizens in the State of Michigan, particularly the city of Detroit and offer a few suggested solutions.

Mrs. NAPOLITANO. Thank you for your testimony.

Next, Mr. Andrew Kricun. Thank you, sir.

Mr. KRICUN. Thank you, Chairwoman Napolitano, Ranking Member Westerman, and distinguished members of the House Water Resources and Environment Subcommittee.

I would like to sincerely thank you for the opportunity to speak before you today to discuss how the Camden County MUA in Camden, New Jersey, used the State Revolving Fund to significantly improve our wastewater infrastructure while holding our rate steady without impacting our communities.

I work with the Camden County MUA, a city right across from Philadelphia, and I also serve on the board of directors of the National Association of Clean Water Agencies, and I work as the chair of their Utility of the Future and Environmental Justice in Community Service Committee.

Camden County has used the State Revolving Fund to significantly improve our performance, and we also did that while holding rates. So specifically, by using the State Revolving Fund, we borrowed over \$1 billion from the fund since 1987 in today's dollars.

In 1996, our household rate was \$337 per year, 23 years ago. Today, 23 years later, by using the SRF to upgrade our system, our rate is only \$352 per year per household. It has only gone up 4 percent in 23 years, less than .2 percent per year because of the State Revolving Fund.

In Camden City, we have a combined sewer system, too, and we have some of the same issues that Ms. Flowers described with regard to combined sewage backing up into people's homes, into parks, into streets. And your zip code should not define whether or not you have safe drinking water or whether or not you have sewage backing up into your streets, parks, or homes.

But with the SRF, thanks to the SRF, we are going to be able to eliminate combined sewage flooding in Camden City for up to the 1-inch storm by the end of 2020. By the end of next year, that combined sewage flooding will be a thing of the past in Camden City because of the SRF, and we will not have to raise rates.

Because the way the SRF works, it is a low interest program, as you know. It is not a handout. It is a handup. We are borrowing funds, a loan that we have to pay back, but because of the low interest rates and because it is spread over 20 and now 30 years in New Jersey, we are able to take those funds, upgrade our system, and do it without affecting our economically distressed communities.

Camden City is one of the poorest cities in the country. We have a household income of \$26,000 per household. We have an unemployment rate of 10 percent. So for us, we cannot raise the rates.

Wastewater utilities like ours have to choose between infrastructure improvements and affordability for our communities, but with the State Revolving Fund, we do not have to choose. We can upgrade our facilities, and we can also do it in an affordable way. Like I said, our rate has only gone up 4 percent total in 23 years because all of our capital improvements are through the State Revolving Fund.

The other thing that we are going to be doing is making our city more resilient. Hurricane Sandy was a disaster for the State of New Jersey. We want to make sure that we are not vulnerable to another storm like that. Using the State Revolving Fund, by the end of next year also, the same timeframe, we will be generating all of our own electricity from our biosolids and taking Camden City's treatment plant off the grid and then building a microgrid to protect the drinking water plant, hospitals, fire, school, police, all through the State Revolving Fund without raising rates.

Again, it is a loan program. It is not a grant, but it makes a huge difference. It is a hand up, not a hand out. I cannot stress that enough.

So proposed solutions, you know, to this infrastructure gap. Chairwoman Napolitano, you indicated that the American Society of Civil Engineers gave a D-plus grade. That is terrible. It is not acceptable, you know, for this country, for anyone, urban or rural. Everyone deserves safe drinking water and deserves to have freedom from sewage in their homes, in their streets.

So the first thing we water utilities have to do is optimize. I heard what you said, Ranking Member Westerman, about we utilities have to do our work ourselves. We are working to optimize our

internal efficiencies. You know, we public sector entities have to harness the private sector model of efficiency for the public good and then use the State Revolving Fund to build our infrastructure in the most cost-effective way.

Those two pillars have enabled us to upgrade our facilities without raising rates, and this can be replicated in any community across the country, urban or rural, because the State Revolving Fund is that successful, that terrific.

The other thing, too, I do recommend and agree an affordability program is necessary. We need to make sure that our low-income customers are able to afford their services. Everyone deserves safe drinking water and freedom from sewage, combined sewage. It ought to be a right that every American citizen has. And with the State Revolving Fund, it can be done.

The other thing I really strongly recommend is a peer-to-peer effort. One of the things we found in Camden City is that although the State Revolving Fund is so helpful, they lacked the resources to apply for funding. They have communities that lack resources, whether it be urban or rural. They do not often have people to write grants or write for funds.

So a peer-to-peer initiative among resource utilities with less resource utilities would be really helpful to help communities like Flint and Gary to apply for funds that are available to them. The National Association of Clean Water Agencies and EPA are working together on a peer-to-peer network to try to assist utilities with that.

The other thing, I agree with you, Ranking Member Westerman. Those are public-to-public partnerships, peer-to-peer. But public-private partnerships are helpful, too, and we were able to use them in some design-build contracts, a power purchase agreement to put solar in. So these opportunities are available.

I would really like to thank you all for your interest in the water sector, the importance of drinking water and wastewater protection.

I will just say one last thing. This is an opportunity for a win-win. President Roosevelt put in the Civilian Conservation Corps to put people to work, to build infrastructure. President Eisenhower did the same with the Interstate Highway System in the 1950s.

This is a tremendous opportunity to put our citizens to work, to protect our environment, and rebuild our water infrastructure.

Thank you very much.

[Mr. Kricun's prepared statement follows:]

**Prepared Statement of Andrew Kricun, P.E., BCEE, Executive Director/
Chief Engineer of the Camden County Municipal Utilities Authority,
Camden, New Jersey**

INTRODUCTION

Chairman Napolitano, Ranking Member Westerman, and distinguished members of the House Water Resources and Environment Subcommittee, I would like to sincerely thank you for the opportunity to speak before you today to discuss how the Camden County Municipal Utilities Authority, located in Camden, NJ, has used the Clean Water State Revolving Fund to upgrade its wastewater infrastructure while sustaining an affordable user rate for our customers. My name is Andy Kricun and I am the Executive Director and Chief Engineer of the Camden County Municipal

Utilities Authority (CCMUA), operators of an 80 million gallon per day wastewater treatment facility located in Camden, NJ. I also serve on the Board of Directors of the National Association of Clean Water Agencies (NACWA), and as the Chair of NACWA's Utility of the Future and Community Service Committees.

Camden County has used the State Revolving Fund to significantly improve its water quality and odor control performance while increasing its annual household user rate from \$337 per household in 1996 to \$352 per household in 2019. This represents only a 4 percent increase, total, in the span of 23 years. When inflation from the past 23 years is factored in, this represents a 40 percent rate decrease for our customers. This demonstrates the tremendous environmental and economic benefits that can be realized from the State Revolving Fund Program. The SRF program is a "hand up", not a "hand out". Without the low interest rates provided through the SRF program, Camden County would have been forced to choose between environmental performance and maintaining an affordable rate for our customers in Camden, NJ, one of the most economically distressed communities in the country. Thanks to the SRF, we were able to provide both the environmental protection and the affordability that our customers need and deserve. And, our case study is completely replicable for any water utility in the country. For these reasons, we sincerely thank Congress, the United States Environmental Protection Agency and the New Jersey Department of Environmental Protection for the SRF funding that we have received, and we strongly support reauthorization of the Clean Water State Revolving Fund as a proven and successful way to protect the environment and the public health while sustaining affordable user rates.

OVERVIEW

The Infrastructure Gap Problem

It is self-evident that properly functioning drinking water and wastewater treatment systems are essential to maintaining the public health of our citizens and protecting our environment. Moreover, our industries and commerce are largely dependent upon the reliable provision of drinking water and wastewater services. However, the American Society of Civil Engineers has recently given a "D" grade to the nation's drinking water and wastewater infrastructure systems. This is indicative of a very significant vulnerability, and corresponding threat, to the public health, the commerce, and the environment of our country.

Moreover, recent climate history, such as Hurricane Sandy in New Jersey and the hurricanes in Houston, Florida and Puerto Rico last year, have shown us that our existing water infrastructure is inadequate to deal with extreme climate events, some of which we are already experiencing now. For example, during Hurricane Sandy and its aftermath, billions of gallons of untreated sewage were discharged into our waterways. Should the climate change more rapidly as most experts predict, then this would only exacerbate the current infrastructure gap. But, even if the climate were not to change, there is already a very significant infrastructure gap in our country's drinking water and wastewater facilities that must be addressed if we are to adequately protect the public health, commerce and the environment into the future.

The Affordability Challenge

The cost of maintaining and upgrading drinking and clean water infrastructure falls nearly entirely on the systems' ratepayers—in fact the Congressional Budget Office found that the Federal share of the nation's total water and wastewater infrastructure investment is just 4 percent, with States and local governments covering the vast majority. I ask that as the House and Senate consider infrastructure legislation this Congress, water be raised to a more equal footing with other sectors like transportation and energy.

Closing the aforementioned infrastructure gap will be very costly and will impose an economic burden on all customers, which will be felt especially by our most economically distressed customers. Camden City, NJ has a median household income, citywide, of only \$26,000 and its unemployment rate is just under 10 percent, at 9.8 percent. Our customers need, and deserve, safe drinking water, and properly functioning water and wastewater infrastructure. However, most of them cannot afford water rate increases with the income and unemployment rates I have quoted. A person's zip code should not determine whether or not they have safe drinking water or have combined sewage backing up into their basements or streets or parks.

Therefore, it is incumbent upon drinking water and wastewater utilities, like mine, to find ways to provide the water treatment services that every citizen, regardless of where they live, deserves, while keeping our rates affordable.

PROPOSED SOLUTIONS

In order to protect public health, the economy and our environment, it is essential that clean water utilities close the existing infrastructure gap, while also keeping rates affordable for our customers. There are at least five important solutions that could help to accomplish this, as follows:

1) *Optimize internal efficiency*—Before water utilities seek assistance from any outside entities, we must first optimize our own internal efficiency, harnessing the private sector efficiency model to work for the public good. In Camden County, we implemented an ISO 14001 Environmental Management System to optimize performance and cost efficiency. For example, by optimizing our preventative to reactive/emergency maintenance ratio, we significantly reduced costs while improving performance.

Improving efficiencies in how a utility can manage its multiple clean water compliance and investment objectives is also an area Federal policy can help advance. I applaud this Subcommittee for advancing language into law last Congress that will help communities consider a more integrated planning approach and better manage costs.

However, alongside strong clean water policy, Federal investment must remain strong as well.

2) *Utilization of the State Revolving Fund Program*—After internal efficiency improvements, the next most important factor for Camden County's infrastructure improvement and rate performance was abundant use of the SRF program. Because of the low interest rates provided by the SRF, spread out over 20, or even 30, years, Camden County was able to upgrade its entire wastewater treatment plant, thereby improving water quality performance, without raising rates for our customers. This is because newer equipment has lower maintenance costs and lower electricity costs and so there is an annual savings in operations and maintenance costs associated with new equipment. Because of the SRF's low interest rates, the annual operations and maintenance cost savings are greater than the annual debt service payments on the loan. This is how the SRF enabled Camden County Municipal Utilities Authority to replace our aging, underperforming, infrastructure, and improve environmental performance while only increasing rates by a total of 4 percent over a period of 23 years, from 1996 to 2019. This resulted in savings of over \$500 million to our ratepayers during that period of time.

The State Revolving Fund program involves loans that still must be paid back by the utility, so it is truly a "hand up", not a "hand out", but this program has enabled Camden County to provide our customers with the water infrastructure they deserve, at rates they can afford. And, Camden County's success in this regard can be replicated in every city and every town, urban or rural, across the country.

3) *Affordability programs*—The balancing act that clean water utilities must undertake to upgrade infrastructure while keeping rates affordable would be aided immeasurably if there were affordability/rate assistance programs, similar to those available for electricity and heat, available to lower income customers. If these programs were available in the clean water industry as well, then clean water utilities could have more flexibility to charge full cost rates needed to restore and preserve infrastructure without harming our most vulnerable customers.

4) *Public-Private partnerships* also offer an excellent opportunity to reduce the infrastructure funding gap while keeping rates down. Tax incentives that encourage private sector investment in clean water infrastructure would be extremely helpful. For example, thanks to tax incentives extant at the time, Camden County entered into a power purchase agreement with a solar panel provider which reduced electricity costs for our ratepayers by over \$300,000 per year, while reducing our vulnerability to power outages with reliable green energy.

5) *Public-Public partnerships*—Improved performance from clean water utilities across the sector can be accelerated by developing peer to peer programs and information sharing mechanisms that ensure optimally systematic and efficient dissemination of best utility practices, already developed by the leaders in the industry, as widely and rapidly as possible across the clean water sector. In this way, the learning curve for best practices can be traversed more quickly, thereby improving environmental performance while reducing operational costs as well. The National Association of Clean Water Agencies (NACWA) is currently working with the United States Environmental Protection Agency (USEPA) and the Water Environment Federation (WEF) to develop a national peer to peer and information exchange program. I believe that this will make a significant difference for the entire sector, especially urban and rural municipalities and utilities with limited resources to improve best practices on their own.

CONCLUSIONS AND RECOMMENDATIONS

In summary, I offer the following conclusions and recommendations:

1. There is a very significant water infrastructure gap that exists at present, even under present climate conditions, that must be dealt with while keeping rates affordable for water customers. Every American citizen, rural and urban, regardless of their zip code, deserve safe drinking water and clean rivers and streams at affordable rates.
2. This gap, if not dealt with now, will only widen and worsen as our nation's water infrastructure continues to age and climate conditions become even less predictable.
3. The State Revolving Fund (SRF) program is a proven and successful resource for clean water utilities to replace and upgrade their infrastructure while keeping rates affordable. The Camden County Municipal Utilities Authority used the SRF extensively to replace all of the main process units for its wastewater treatment plant, and upgrade its sewer system, while only raising rates 4 percent, total in a period of 23 years. The SRF was an essential component of that environmental and economic success for our ratepayers. We strongly recommend the re-authorization of the SRF, at the highest levels possible, so that other municipalities across the country can realize the same economic benefits that Camden County has been fortunate to realize. We applaud the bipartisan legislation introduced by Chairman Napolitano and members of the Transportation & Infrastructure Committee to do just that for the CWSRF.

Other vital Federal programs that provide important support for the States in implementing specific clean water objectives similarly deserve ongoing support. For example, the Section 319 program that provides funding to the States to help localities address nonpoint pollution control can help advance green infrastructure, which I am proud to say Camden County has made huge strides in advancing.

4. In addition to the SRF, clean water utilities must also work to optimize their own efficiency and also look for opportunities for public-private partnerships and public-public, peer to peer, partnerships in order to further improve environmental performance and cost efficiency.
5. Affordability programs for lower income families will enable utilities to charge full cost rates that will allow for the infrastructure replacement that is needed without disproportionately burdening the most economically vulnerable members of our communities.
6. Finally, there is an opportunity for a "win-win" in dealing with the infrastructure gap as construction of new water infrastructure will also create jobs at a time when they are badly needed in our economy. Just as President Roosevelt did with the Civilian Conservation Corps, and President Eisenhower did with the construction of the Interstate Highway system, there is an opportunity to address our water infrastructure problems and create jobs at the same time.

Thanks, once again, to the distinguished members of the House Water Resources and Environment Subcommittee for holding this hearing and for your focus on the importance of the State Revolving Fund program to clean water utilities and the communities that we serve. There is a tremendous opportunity to better protect the public health and the environment, and create jobs for our economy, without causing economic harm to our most vulnerable communities. Thank you very much for the opportunity to address this very important issue with you. I look forward to your questions.

ABOUT THE CAMDEN COUNTY (NJ) MUNICIPAL UTILITIES AUTHORITY

The Camden County Municipal Utilities Authority (CCMUA) operates an 80 million gallon per day wastewater treatment plant, and a 125-mile regional sewer system, that provides sewage treatment and conveyance service to the 500,000 residents of Camden County, NJ. Camden County consists of the county seat of Camden City, one of the most economically distressed cities in the Nation, and 36 suburban municipalities of varying economic wherewithal. The CCMUA discharges to the Delaware River and is, after Philadelphia and Wilmington, the third largest point source discharger to the Delaware. In addition, the CCMUA's treatment plant is only about one hundred yards from a residential community of about 1800 people. Therefore, the CCMUA faces four main challenges:

- optimizing environmental performance to optimize the water quality of the Delaware River
- minimizing odor impact on the adjoining neighborhood

- restoring and preserving our infrastructure, and reducing our vulnerability to severe storms
- accomplishing all of these goals while minimizing costs to our ratepayers, particularly those living in the economically distressed city of Camden.

Mrs. NAPOLITANO. Thank you very much for your testimony.

Ms. Heaps.

Ms. HEAPS. Good morning, Chairwoman Napolitano, Ranking Member Westerman, and members of the subcommittee.

I am Jill Witkowski Heaps, visiting scholar at the University at Buffalo School of Law and assistant professor at Vermont Law School. I also serve as Vice Chair of the National Environmental Justice Advisory Council, a Federal advisory committee to EPA on environmental justice.

I chaired the work group which wrote the report, "EPA's Role in Addressing the Urgent Water Infrastructure Needs of Environmental Justice Communities."

That report is being delivered to Administrator Wheeler this week. I am happy to submit to you a copy of the report when it is available.

I am here today speaking in my individual capacity.

The city of Buffalo has invested more than \$150 million in its water infrastructure over the past 10 years, but Buffalo needs to raise water revenues to pay for more improvements, including a \$500 million program to address the city's lead poisoning problem by replacing 41,000 lead-containing resident service lines.

Many Buffalo residents already have problems paying their water bills. More than 30 percent of the households are at or below the Federal poverty level. Approximately 200 households a month have their water shut off.

On January 1st, 2019, Buffalo adopted an affordability program along with its water rates increase, but the city will see more shut-offs despite the new program. Why?

First, the program only sought to cover the cost of the rate increase, even though the city already had water affordability issues.

Second, even though 40,000 households will be eligible for the program, Buffalo estimates 10 percent participation in the program. That means 36,000 households living paycheck to paycheck will see a 17-percent increase in their bills.

Third, the city increased the capacity charge, not the cost of water itself. So families cannot avoid increased bills by conserving water.

This example demonstrates at least two things:

One, decades of infrastructure underfunding have left systems crumbling. Families are now struggling to pay larger and larger water bills as utilities are raising rates to pay for delayed investments.

This problem is not unique to Buffalo. According to a Michigan State University study, in 2014, approximately 13.8 million households likely struggled to pay their water bills.

The second lesson is that utilities need help designing and implementing effective programs that will actually address water affordability issues. We need congressional action to solve this problem.

I have six recommendations to share with you today. First, Congress needs to massively increase Federal Government investment

in water infrastructure. While the proposed \$4 billion appropriation for the Clean Water State Revolving Fund is an improvement over past years, \$6 billion would bring investment back up to Reagan era levels.

But even that is not enough. Congress must take bold action to fill the \$600 billion funding gap for water and wastewater infrastructure. The WATER Act of 2019, which creates a \$35 billion trust fund to invest in water infrastructure improvements, is a good start.

Second, Federal water infrastructure funding should provide more grants to the neediest communities. The neediest communities often struggle to qualify for loans or even apply for grants, particularly where utilities are run by volunteers.

States should be proactively identifying and reaching out to these communities who may not be aware of grant opportunities.

Third, Congress should recognize that water is a human right. Everyone should have access to clean, safe drinking water and sanitation. Congress can recognize this in a stand-alone law modeled after California's right to water law or in water affordability legislation.

Fourth, Congress should create a Federal block grant program to directly assist households in paying water and sewer bills. This can be modeled after the Low Income Home Energy Assistance Program, LIHEAP.

Fifth, we need legislation promoting water affordability. This legislation should prioritize solutions that provide low-income customers the dignity of paying their bills without having to enroll in an assistance program. Structuring rates in a way to keep essential water usage affordable for everyone promotes equity, incentivizes water conservation, eases stress on the sewage system, and addresses concerns where State law, like California, provides hurdles to affordability programs.

The Honolulu program is a good example of an essential needs rate structure.

Any legislation helping utilities adopt a customer assistance program needs to ensure programs are thoughtfully designed and well implemented based on a community's particular challenges. As Ms. Flowers said, we need to listen to the communities, and they need to have input in these programs as they are being developed.

Philadelphia's Tiered Assistance Program is an excellent model of where bills for low-income residents are capped based on income. Programs should automatically enroll customers using existing eligibility requirements from other sectors, like food stamps and SNAP.

Finally, all communities deserve clean water now. The fact that families in a community are struggling with household water affordability should not be an excuse for regulated entities pushing Clean Water Act compliance back for decades.

Congress should fund programs like WIFIA that can provide significant financial assistance to help bring water and sewer systems into compliance as quickly as possible.

Communities can then work to pay back those funds over time, spreading the cost of upgrades over decades while getting clean water now.

Thank you for the opportunity to address you today. I would be delighted to serve as a resource as this committee continues to craft solutions to address these daunting issues.

Thank you.

[Ms. Heaps' prepared statement follows:]

Prepared Statement of Jill Witkowski Heaps, Visiting Scholar, University at Buffalo School of Law, and Assistant Professor, Vermont Law School

Good morning, Chairperson Napolitano, Ranking Member Westerman, and members of the Subcommittee. I am Jill Witkowski Heaps, visiting scholar at the University at Buffalo School of Law and Assistant Professor at Vermont Law School. I am an expert in water law and policy and environmental justice. I have worked on water issues in most of the states represented by members of this committee, including California, Arkansas, New York, Louisiana, Massachusetts, Alabama, Georgia, as well as states in the Mississippi River watershed and the Chesapeake Bay watershed. I also serve as vice-chair of the National Environmental Justice Advisory Council, a Federal advisory committee to EPA on environmental justice. I chaired a workgroup which wrote the report "EPA's Role in Addressing the Urgent Water Infrastructure Needs of Environmental Justice Communities." That report is being delivered to Administrator Wheeler this week. I am here today speaking in my individual capacity.

SUMMARY OF TESTIMONY

Buffalo, New York provides a key example of the water infrastructure funding problems facing communities across the country. Buffalo has invested more than \$150 million in its infrastructure over the past 10 years, but the utility needs to raise revenues to pay for more infrastructure upgrades. For example, the city will be addressing its lead poisoning problem by investing \$500 million to replace 41,000 resident service lines that contain lead.

While Buffalo faces mounting water infrastructure needs, Buffalo residents already struggle to pay their water bills. More than thirty percent of Buffalo households are at or below the Federal poverty level. Approximately 200 households a month have their water shut off.

Along with its January 1, 2019 water rate increase, the city adopted an affordability program. But the city will see more shutoffs despite the new program for three main reasons. First, the program only sought to cover the cost of the increase, even though the city already had affordability issues. Second, even though 40,000 households would be eligible for the program, Buffalo estimates 10 percent participation in the program. That means 36,000 households living paycheck to paycheck will be seeing a 17 percent increase in their bills. Third, the city increased the capacity charge, not the cost of water itself. Families cannot avoid increased water bills by conserving water.

The Buffalo case study demonstrates how underfunding causes water affordability issues and how utilities are struggling to address it. Decades of underfunding has left water systems crumbling. Families are now struggling to pay larger and larger water bills as utilities are raising rates to pay for delayed investments. A Michigan State University study found 13.8 million households likely struggled to pay their water bills in 2014. Further, utilities need help designing and implementing effective programs that will actually address affordability issues.

I recommend that Congress take the following actions to address the problem:

1. *Congress should massively increase federal government investment in water infrastructure.* The Clean Water State Revolving Fund should be funded at \$6 billion a year to bring investment back up to Reagan-era levels. But even that is not enough. Congress must take bold action to fill the \$600 billion funding gap for water and wastewater infrastructure. The WATER Act of 2019, which creates a \$35 billion trust fund to invest in water infrastructure improvements, is a good start.
2. *Federal water infrastructure funding should provide more grants to the neediest communities.* The neediest communities often have the least capacity to qualify for loans or even apply for grants, particularly where utilities are run by volunteers. Congress should remove the statutory limitation of subsidies in the Clean Water SRF. States should be proactively identifying and reaching out to these communities, who may not be aware of grant opportunities.

3. *Congress needs to recognize that Clean Water is a human right.* Everyone should have access to clean, safe drinking water and sanitation.
4. *Congress should create a Federal block grant program to directly assist households in paying water and sewer bills.* This can be modeled on the Low Income Home Energy Assistance Program (LIHEAP).
- 5 *Congress should pass legislation promoting water affordability.* Legislation should prioritize solutions that provide low income customers the dignity of paying their bills without having to enroll in an assistance program. Rates can be structured in a way that keeps essential water usage affordable for everyone. These rate structures promote equity, incentivize water conservation, ease stress on the sewage system, and address concerns where State law provides hurdles to affordability programs. The Honolulu program provides a good example of a rate structure making essential needs affordable to all.

Any legislation helping utilities to adopt a customer assistance program needs to ensure programs are thoughtfully designed and implemented, based on a community's particular challenges. Philadelphia's Tiered Assistance Program is an excellent model of a program offering water payments that are capped based on income. Programs should automatically enroll customers using existing eligibility requirements from other sectors. Utilities should combine customer assistance programs with strategies such as bill timing, budget billing, pre-termination protections, conservation incentives and debt management plans that assist struggling households.

THE WATER INFRASTRUCTURE AFFORDABILITY PROBLEM

Ensuring that all Americans have affordable, reliable, and sustainable access to safe drinking water and appropriate wastewater treatment and disposal is a defining problem of the 21st century. Water infrastructure demands, costs, and complexity mean many Americans do not have access to clean, affordable water, and sanitation. American public water systems and communities of all sizes are grappling with the need for water infrastructure maintenance or improvements to ensure clean, safe, accessible, and affordable drinking water and treatment of wastewater. Rising rates are making basic water and wastewater service unaffordable for low income consumers across the country. People are faced with choosing between paying their rent or paying their water and sewerage bills. Aging infrastructure, deferred maintenance, changes in regulations, and limitations on water resources increase the complexity and cost of ensuring access to the basic public health needs of safe drinking water and adequate wastewater treatment. The problem will only get worse in the future, as increasingly frequent and severe drought and flooding from climate change impact our most vulnerable communities.

The U.S. EPA conservatively estimates the country must invest \$472.6 billion for drinking water¹ and \$271 billion for sewage systems and stormwater² over the next 20 years to meet and maintain existing health and environmental standards. EPA recognizes that this \$744 billion projection likely underestimates the actual needs, given that systems underreport their needs. Further, the sewage system estimate represents investments needed between 2012 and 2017, even though the Clean Water Act directs EPA to submit updated needs estimates every other year.³ The Value of Water campaign estimates that the US needs to invest an additional \$82 billion per year in water infrastructure at all levels of government over the next 10 years to meet projected capital needs.⁴ Likewise, the American Water Works Association estimates that restoring existing water systems as they reach the end of their useful lives and expanding them to serve a growing population will cost at least \$1 trillion over the next 25 years.⁵

¹EPA, 2018 Drinking Water Infrastructure Needs Survey and Assessment, https://www.epa.gov/sites/production/files/2018-03/documents/sixth_drinking_water_infrastructure_needs_survey_and_assessment.pdf.

²EPA, Clean Watersheds Needs Survey—2012 Report and Data, <https://www.epa.gov/cwns/cleanwatersheds-needs-survey-cwns-2012-report-and-data>.

³The Clean Water Act directs that EPA shall "make . . . a detailed estimate, biennially revised, of the cost of construction of all needed publicly owned treatment works in all of the States and of the cost of construction of all needed publicly owned treatment works in each of the States . . ." 33 U.S.C. § 1375(b)(1)(B). The Act directs that the EPA Administrator "shall submit such detailed estimate and such comprehensive study of such cost to the Congress no later than February 10 of each odd-numbered year." 33 U.S.C. § 1375(b)(1).

⁴Value of Water Campaign, "The Economic Impact of Investing in Water," http://thevalueofwater.org/sites/default/files/Economic%20Impact%20of%20Investing%20in%20Water%20Infrastructure_VOW_FINAL_pages.pdf.

⁵American Water Works Association, "Buried No Longer: Confronting America's Water Infrastructure Challenge" <http://www.urbanwaterslearningnetwork.org/wp-content/uploads/2017/08/AmericanWaterWorksBuriedNoLonger2017.pdf>

Small, unincorporated communities, orphaned systems, and those serving vulnerable, impoverished populations require urgent attention. These communities lack adequate resources to repair and replace infrastructure, or to build new systems.⁶ Some rural communities, like Lowndes County, Alabama have never had working septic systems, despite decades of pleas for help.⁷

Crumbling water infrastructure means enormous expenses for many utilities to bring their systems into compliance with the Clean Water Act. For example, Kansas City faces a \$2.5 billion price tag to come into compliance with the Clean Water Act.⁸ Baltimore plans to invest an additional \$1.6 billion in upgrades by 2030 to comply with its Clean Water Act consent decree.⁹ Despite investing more than \$1 billion in upgrades since 2002, Baltimore missed its original consent decree deadline, and now has until 2033 to comply.¹⁰ The cost of these upgrades have hit Baltimore residents hard. In 2013, the city raised rates 42 percent over 3 years.¹¹ Then in January of 2019, the city again voted to raise rates another 30 percent over 3 years.¹²

Even utilities without major upgrades are needing to increase revenues to meet capital investment and operations and maintenance expenses, meaning families are struggling to pay their water bills. A Michigan State University study found 13.8 million households likely struggled to pay their water bills in 2014.¹³ That study also found that if water rates rise at projected amounts over the next five years, the percentage of U.S. households who will find water bills unaffordable could triple from 11.9 percent to 35.6 percent.¹⁴ Detroit, Michigan has shut off water to more than 100,000 households since 2014.¹⁵ In Philadelphia, in 2016, an estimated 227,000 customers, or 4 out of 10 water accounts, were past due.¹⁶

In the face of mounting infrastructure costs, the Federal Government has been investing less and less in water infrastructure. In 2016, the Federal Government invested approximately \$4 billion in water and sewer infrastructure, down from approximately \$16.8 billion in the mid 1970's.¹⁷ State and local government invested approximately \$109 billion in water infrastructure in 2016. We need congressional action to address this estimated \$600 billion water investment shortfall.¹⁸

⁶“Aging infrastructure, lead pipes, nitrate runoff and funding among challenges vexing Midwest’s drinking water systems,” Mar. 2016, <http://www.csgmidwest.org/policyresearch/0316-drinking-water.aspx>.

⁷See Catherine Flowers, “Opinion: A County Where the Sewer is Your Lawn,” *New York Times*, May 22, 2018; “The U.N. Looks at Extreme Poverty in The U.S., From Alabama to California,” *NPR*, Dec. 12, 2017, <https://www.npr.org/sections/goatsandsoda/2017/12/12/570217635/the-u-n-looks-at-extreme-poverty-in-the-u-s-from-alabama-to-california>; <https://www.nytimes.com/2018/05/22/opinion/alabama-poverty-sewers.html>.

⁸EPA, “Kansas City, Missouri Clean Water Act Settlement,” <https://www.epa.gov/enforcement/kansas-city-missouri-clean-water-act-settlement>.

⁹“Baltimore officials approve \$1.6 billion, 13-year sewer plan,” *Baltimore Sun*, Aug. 9, 2017 <https://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-sewer-consent-decree-20170808-story.html>?

¹⁰*Id.*

¹¹“Baltimore raises rates 42 percent over three years,” *Baltimore Sun*, July 3, 2013, <https://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-water-bill-increase-20130703-story.html>.

¹²“Baltimore water rates will increase 30 percent over next three years,” *Baltimore Sun*, Jan. 9, 2019, <https://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-water-rate-hike-20190109-story.html>.

¹³Mack, Elizabeth, Wrase Sarah (2017) “A Burgeoning Crisis? A Nationwide Assessment of the Geography of Water Affordability in the United States.” *PLOS ONE* <https://doi.org/10.1371/journal.pone.0169488>.

¹⁴*Id.*

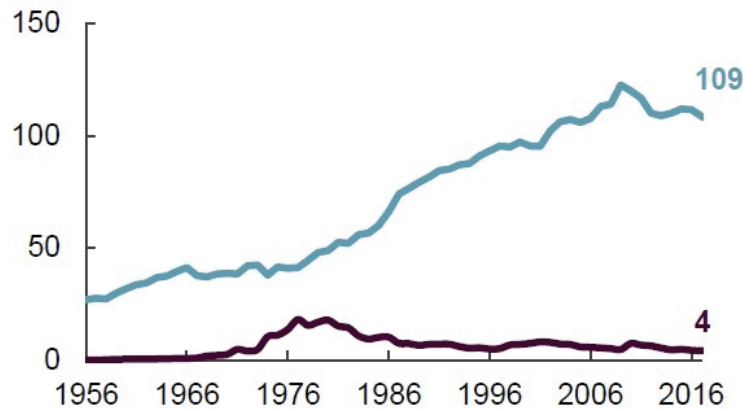
¹⁵“Detroit shut off water to 1 in 10 homes this year. Yes, that’s progress,” *Bridge Detroit Journalism Cooperative*, Dec. 5, 2017, <https://www.bridgemi.com/detroit-journalism-cooperative/detroit-shut-water-1-10-homes-year-yes-thats-progress>.

¹⁶“7 years, no water at home for Senior,” *NBC Philadelphia*, April 8, 2016, <https://www.nbcphiladelphia.com/news/local/7-Years-No-Water-375060031.html>.

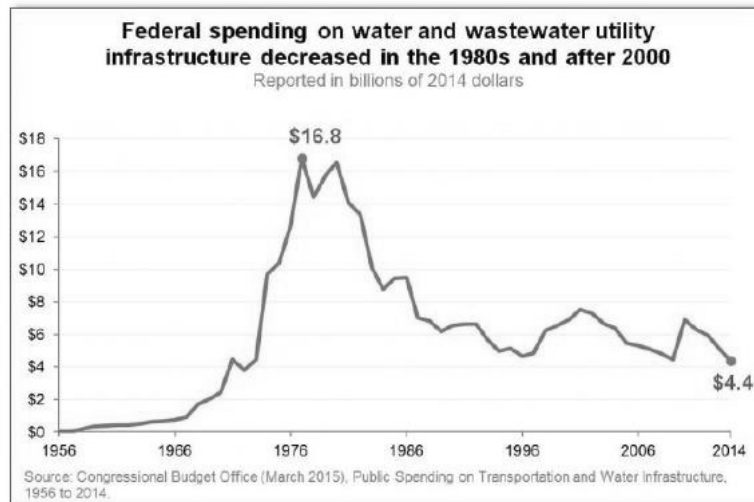
¹⁷In 2014 dollars.

¹⁸“New water infrastructure finance center seeks to restore \$600 billion infrastructure gap.” <http://sustainablewater.com/new-water-finance-center-seeks-to-restore-600-billion-infrastructure-gap/>.

Federal spending on water and wastewater utility infrastructure has decreased while State and local spending on water infrastructure has quadrupled.



Source: Congressional Budget Office (October 2018)



THE SOLUTIONS

Solution #1: Congress must massively increase federal investment in water infrastructure.

- *Appropriate \$6 billion per year for the Clean Water State Revolving Fund.*

The Clean Water State Revolving Fund and the Safe Drinking Water Revolving Fund are the main vehicles to get Federal moneys to water and wastewater utilities. Congress established these revolving funds to provide States sustainable, long-term financial assistance to support communities' water infrastructure needs. While the proposed \$4 billion appropriation for the Clean Water State Revolving Fund is an improvement over past years, \$6 billion would bring investment back up to Reagan-

era levels.¹⁹ This increased investment would be a good start to the Federal Government funding a larger portion of water investments and closing the funding gap.²⁰ The Clean Water SRF should target a growing list of priorities that are currently underrepresented in the States' portfolios of assistance, including:²¹

- Water infrastructure that is designed to address the increased risk of droughts, floods, sea level rise, and extreme weather events;
- Green infrastructure and stormwater management;
- Source water protection to help prevent pollution and runoff from contaminating rivers, lakes, and reservoirs; and
- Water efficiency, water reuse, and water recycling.
- *More of the Clean Water SRF must be awarded as grants to the neediest communities.*

The communities that need the money most often have the least capacity to apply for grants and loans, particularly where utilities are run by volunteers. A large portion of Federal investment should support grants for the neediest communities. To support this goal, Congress should remove the statutory cap on subsidization, which is currently set at 30 percent of EPA's annual capitalization grant. States should be proactively identifying and reaching out to these communities, who may not be aware of grant opportunities.

- *Increase appropriations to address nonpoint source pollution.*

Appropriations for Section 319 nonpoint source grants is critical to making progress toward our clean water goals. Stormwater and agricultural runoff pollution are the two biggest sources of water pollution across the country and deserve special attention. Section 319 funding should focus on supporting green infrastructure, especially in low income communities.

- *Continue funding for WIFIA until it can be replaced with another major water infrastructure funding vehicle.*

The Water Infrastructure Financing and Innovation Act (WIFIA) increased investment in water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. For example, Baltimore recently received a \$202 million loan under WIFIA to support its clean water upgrades.²² San Diego received a \$614 million WIFIA grant to support its cutting-edge potable reuse project, which addresses both sewage and water supply issues for the city.²³ WIFIA funding is limited to projects that are invited to apply for funding. For 2018, EPA invited 39 projects to apply for loans totaling up to \$5 billion. This invitation-only process excludes many needy communities and projects across the Nation. It has led to at least one project that should not be prioritized over funding needy communities. Clean water advocates and conservationists opposed the Carlsbad Desalination Project for years as the most energy intensive and expensive water supply option that had a poorly designed ocean intake that unnecessarily harms wildlife.²⁴ EPA invited the project to apply for a \$32 million loan to reconfigure intake facilities and come into compliance with California law.²⁵

- *Create a trust fund for water infrastructure investments.*

Increasing funding for the Clean Water SRF, the Drinking Water SRF, and WIFIA is not enough. With more than 27 million Americans being served by water systems violating health-based standards established in the Safe Drinking Water Act,²⁶ Congress must take bold action to meet our nation's urgent infrastructure needs to protect public health. The Water Affordability, Transparency, Equity, and

¹⁹ See Natural Resources Defense Council, "Go Back to the Well: States and Federal Government are neglecting a key funding source for water infrastructure," May 2018, <https://www.nrdc.org/sites/default/files/State-revolving-fund-water-infrastructure-ip.pdf>.

²⁰ See, Clean Water for All, "Water, Health, and Equity, Sept. 2017, <http://protectcleanwater.org/wpcontent/uploads/2017/09/CWFA-Infrastructure-Health-Equity-White-Paper-Oct-2018.pdf>.

²¹ See NRDC, "Go Back to the Well," supra note 17.

²² "EPA provides \$202 million loan to modernize Baltimore's wastewater infrastructure," EPA, Feb. 25, 2019, <https://www.epa.gov/newsreleases/epa-provides-202-million-loan-modernize-baltimore-wastewater-infrastructure>.

²³ "EPA awards \$614 million to bolster San Diego's innovative Pure Water project," the city of San Diego, Nov. 27, 2018, <https://www.sandiego.gov/mayor/news/releases/epa-awards-614-million-loan-bolster-san-diego%E2%80%99s-innovative-pure-water-project>.

²⁴ See <https://www.sdcoastkeeper.org/drinkable/san-diegos-water-supply/desalination/desalination>.

²⁵ EPA, "2018 WIFIA selected projects," <https://www.epa.gov/wifia/wifia-selected-projects>.

²⁶ Natural Resources Defense Council, "Threats on Tap: Widespread Violations Highlight Need for Investment in Water Infrastructure and Protections" (2017), <https://www.nrdc.org/resources/threats-tap-widespread-violations-waterinfrastructure>.

Reliability (WATER) Act of 2019,²⁷ which creates a \$35 billion trust fund to invest in water infrastructure improvements, is a good start. The WATER Act also directs the EPA Administrator, in conjunction with the Civil Rights Division of the United States Department of Justice, to study “discriminatory practices of water and sewer service providers” and “violations by such service providers that receive Federal assistance of civil rights under title VI of the Civil Rights Act of 1964 with regard to equal access to water and sewer services.” Given EPA’s poor track record related to Title VI of the Civil Rights Act,²⁸ Congress should appoint an independent bipartisan commission of experts to investigate Title VI violations related to water and sewer service.

Solution #2: Congress should recognize Clean Water is a human right.

Everyone should have access to clean, safe drinking water and sanitation. Every person needs safe water to drink, bathe, cook, and clean and every community needs a working wastewater system to prevent the spread of disease, bacteria and parasites. When poor communities are denied access to clean, safe, affordable water and sanitation (specifically low-income communities and communities of color), they are put at a high risk for waterborne diseases and pathogens (such as cholera, typhoid, legionella, and polio).²⁹

The World Health Organization firmly states, “Water safety and quality are fundamental to human development and well-being. Providing access to safe water is one of the most effective instruments in promoting health and reducing poverty.”³⁰ In fact, in 2010, the United Nations General Assembly passed Assembly Resolution 64/292, formally recognizing the position that clean water and sanitation is a human right.³¹

Congress should adopt laws that recognize the human right to water. Congress could follow in California’s lead and adopt a human right to water law, modeled after AB 685, or recognize the human right to water in affordability legislation. California’s Right to Water law prioritizes domestic drinking water for human consumption over commercial water use and directs State agencies to consider the human right to water when implementing policies.

Solution #3: Congress should create a Federal block grant program to provide direct assistance to households to pay water and sewer bills.

A Federal water and sewer bill block grant assistance could be modeled on the Low Income Home Energy Assistance Program (LIHEAP). LIHEAP provides block grants to States, tribes, and territories to help low income households in meeting home energy needs. The Water Affordability Act of 2018, introduced by Senator Harris, would have created the Low Income Sewer and Water Assistance Program (LISWAP), to award grants for public water utility companies to assist low-income households with bill repayment. Eligibility for grant assistance would consider environmental risk factors and inequitable environmental burdens.

Solution #4: Congress should adopt water affordability legislation.

To directly address household water affordability issues, Congress should adopt water affordability legislation. This legislation should do the following:

- *Facilitate utilities adopting affordable rate structures.*

One of the best options to address household affordability is to structure rates in a way that keeps minimal water usage affordable for everyone. This could include eliminating or drastically reducing the base cost to simply have water access at home, coupled with very low cost for very low water usage. This provides low income customers the dignity of paying their bills without having to enroll in an assistance program. To ensure that utilities can meet revenue requirements, utilities would create several tiers of costs for additional water usage, ramping up costs as water usage increases. This would spread fixed costs across user groups more equitably because larger volume users place a greater burden on the system. This approach also incentivizes water conservation, which eases the stress on the sewage system.

²⁷ H.R. 1417 (Lawrence) and S. 611 (Sanders).

²⁸ See U.S. Commission on Civil Rights, “Environmental Justice: Examining the Environmental Protection Agency’s Compliance and Enforcement of Title VI and Executive Order 12898,” Sept. 2016, https://www.usccr.gov/pubs/2016/Statutory_Enforcement_Report2016.pdf

²⁹ See World Health Organization, Drinking Water, <http://www.who.int/mediacentre/factsheets/fs391/en/>; Center for Water Policy, University of Wisconsin-Milwaukee, “Water Main Breaks Expose Public to Waterborne Disease Risk,” <http://home.freshwater.uwm.edu/mcclanlab/files/2013/06/6-21Water-main-breaks-expose-public-to-waterborne-disease-risk.pdf>.

³⁰ World Health Organization, Water Sanitation Hygiene, http://www.who.int/water_sanitation_health/water-quality/en/.

³¹ See http://www.un.org/waterforlifedecade/human_right_to_water.shtml.

Additionally, this approach addresses concerns around customer assistance plans where State law, like California's Proposition 218, provides hurdles to these programs.

Honolulu's program provides an excellent example of very low-cost water for very low water usage.³² The Board of Water Supply established an Essential Needs Tier that all residential customers will be given for the first 2,000 gallons of water used, to promote affordability. Ten percent of all Honolulu residential customers use less than 2,000 gallons per month, and this Essential Needs rate structure will assist those with low incomes or on fixed income. This water rate structure is consistent with Hawai'i's State water code, which recognizes that the waters of Hawai'i are held for the benefit of the citizens of the State and the people have a right to have the waters protected for their use.³³

- *Support adoption of effective customer assistance programs.*

An EPA study found that approximately 25 percent of utilities have customer assistance programs, which use bill discounts, special rate structures, and other means as an approach to help financially constrained customers maintain access to drinking water and wastewater services.³⁴ Customer assistance programs can be effective in addressing water affordability issues, but only if they are well-designed and implemented, based on a community's particular challenges. The Buffalo example demonstrates that a well-intentioned program, if not well-designed and implemented, will be ineffective.

- *Tailor every customer assistance program to community needs.*

To design an effective customer assistance program, a utility must first determine why people are struggling to pay their bills. Are there high poverty levels and people are struggling to make ends meet? Are quarterly bills too large and too difficult to budget for in households living paycheck to paycheck? Are people struggling during the heat of summer or the dead of winter when energy bills are the highest? Are people wracking up tremendously high bills due to undetected leaks? Are landlords or fellow tenants in a duplex delinquent in paying the bill? Are customers being charged for water usage at an apartment after they have moved out? Are people struggling with personal trauma such as illness, job loss, divorce, or caring for ailing family?

A utility or its consultants will not be able to design and implement an effective customer assistance program without conducting significant outreach to learn why customers are struggling to pay their bills. Only once a utility understands the community it serves can it design a program to address customers' struggles. Ideally, a utility should convene both a stakeholder group to guide program design, as well as conduct individual or community-level meetings—at places where customers are already gathering—to understand customer concerns, hear customer complaints, and accept customer ideas about solutions.

- *Customer assistance programs should automatically enroll customers.*

Programs should automatically enroll customers using existing eligibility requirements from other sectors. There are many well-established Federal and State programs to ensure that low-income households have affordable access to utility services for electricity, natural gas, and telecommunications, including the Federal Low Income Home Energy Assistance Program (LIHEAP) and the Low Income Energy Efficiency Program (LIEE).³⁵ A number of water suppliers use the same program-enrollment eligibility as a public assistance program such as Medicaid; Women, Infants, and Children Program; Supplemental Security Income; Temporary Assistance for Needy Families (TANF); or Tribal TANF.³⁶

- *Where auto-enrollment is not possible, utilities should hire communications professionals to conduct community outreach about the program and assist customers with enrollment.*

Once a utility invests in creating a customer assistance program, it must invest in a creating and implementing a community outreach plan to inform customers of the program and assist with enrollment. Time and again, utilities rely on the engi-

³² See Board of Water Supply rate schedule for Schedule for July 1, 2019—June 30, 2023, <https://www.boardofwatersupply.com/bws/media/files/water-rate-schedule-2018-2023-2018-09-15.pdf>.

³³ State of Hawaii State Water Code, Chapter 174C, Part 1 Section 2.

³⁴ EPA, "Drinking Water and Wastewater Utility Customer Assistance Programs," at 2, April 2016, https://www.epa.gov/sites/production/files/2016-04/documents/dw-ww_utilities_cap_combined_508-front2.pdf.

³⁵ Pacific Institute, "Water Rates: water affordability," Jan. 2013, <https://pacinst.org/wp-content/uploads/2013/01/water-rates-affordability.pdf>. California programs include California Alternate Rates for Energy (CARE); the Family Electric Rate Assistance Program (FERA) and the California LifeLine Program.

³⁶ Id.

neers that assist with operations upgrades to design community outreach programs or conduct outreach. Congress should ensure that any pilot programs that support community assistance programs require utilities to work with professionals qualified in community outreach, stakeholder participation, communications, and environmental justice. The award-winning Pure Water San Diego project is an exemplar of effective stakeholder process and community outreach.³⁷ The stakeholder processes provided multiple meaningful opportunities for input. The city put such an outstanding effort in reaching communities where they are that the project now has widespread community support. This widespread support is remarkable because an identical project more than a decade earlier was tabled due to community opposition.

- Prioritize programs that offer income-based payments.

Often the most effective affordability programs provide income-based payments that remain the same regardless of water use. Philadelphia's Tiered Assistance Program is an excellent model.³⁸ The average bill for residents accepted into the is \$19.84 per month, compared to the system-wide average of \$70.87.³⁹ Twenty percent of program enrollees only pay \$12, the program minimum.⁴⁰ The Tiered Assistance Program is divided into three tiers: households earning up to 50 percent of the Federal poverty level pay 2 percent of monthly income; those between 51 percent and 100 percent of the Federal poverty level pay 2.5 percent; and those between 101 percent and 150 percent pay 3 percent of monthly income. Households with higher incomes that experience a special hardship may still apply for the program. For those accepted in the program, bills do not change according to use.

- Utilities should combine customer assistance plans with other services that alleviate hardships for low-income customers.

While providing lower water and sewer bills for low-income customers is the most direct way to address water affordability, there are a variety of services that can be provided to reduce financial hardships for low-income customers.⁴¹

These programs include:

| Service | Description |
|-----------------------------|---|
| Bill timing | Change the timing of bills to more closely coincide with the income stream of the household. For example, time bills to coincide with customer's receipt of Social Security or pension income. |
| Budget billing | Allow methods of bill payment to avoid unaffordable peaks (typically during summer months). |
| Pre-termination protections | Provide full due process protections before terminating water service—for example, required notice of customer's opportunity to enter a budget billing program or deferred payment arrangement. |
| Appropriate charges | Ensure that all charges for late payments, disconnection and reconnection, and deposits are imposed after clear notification and do not exceed the true costs of the services provided. For example, a water service provider may choose to waive late payment fees for low-income customers. |
| Conservation programs | Provide assistance to help reduce usage by curtailing leaks and installing conservation devices—for example, target low-income houses for audit, retrofit, and rebate programs. |
| Debt management plans | Establish incentive programs that reward customers for timely payments with partial forgiveness of old debt and provide installment plans to re-pay old debt. |

Source: Pacific Institute, "Water Rates: Water Affordability" Jan. 2013

Solution #6 Congress should help low-income and vulnerable communities access cutting-edge technology.

Congress should provide grants to communities with high income inequality and large numbers of low-income households to use innovative technology to address

³⁷ Pure Water San Diego has won more than two dozen awards, many related to its public outreach. See <https://www.sandiego.gov/public-utilities/sustainability/pure-water-sd/awards>.

³⁸ See <https://www.phila.gov/services/water-gas-utilities/pay-or-dispute-a-water-bill/water-bill-customer-assistance>.

³⁹ "Philadelphia water rate experiment aims to help struggling residents pay bills," Circle of Blue, Nov. 1, 2017, <https://www.circleofblue.org/2017/world/philadelphia-water-rate-experiment-aims-help-struggling-residents-pay-bills/>

⁴⁰ Id.

⁴¹ See Pacific Institute, "Water Rates: water affordability," Table 4. Jan. 2013, <https://pacinst.org/wp-content/uploads/2013/01/water-rates-affordability.pdf>.

water, sewer, and affordability issues. For example, potable reuse projects can be used to address water supply and sewage issues, while also treating drinking water with reverse osmosis and UV light, which eliminate most contaminants of emerging concern from drinking water. Grey water systems can drastically reduce household water usage, and rain barrels can reduce water usage for outdoor uses. Low flow and dual-flush toilet systems can reduce water bills and reduce burdens on the sewer system. Composting toilet systems can provide sanitary sewage solutions where households are not connected to a sewer system. Even water tracking systems, like Dropcountr,⁴² can help customers track water usage in real-time, which can assist with water conservation. Technology and innovation should not be limited to our wealthiest communities.

Solution #7 Ensure the poorest communities have access to clean water now.

Community affordability—the ability of a community to pay for upgrades to comply with the Clean Water Act—is a legitimate concern for regulated entities. But everyone deserves clean water now, and the fact that a community has families struggling to pay their water bills does not justify pushing Clean Water Act compliance out for decades. Instead, we need to find ways to get these communities the funds to upgrade their systems immediately and figure out a long-term solution to plan for scheduled capital improvements and operations and maintenance to avoid massive upgrade costs in the future.

For example, Baltimore delayed maintenance of their aging sewer system for nearly 100 years after they built their system in 1909. EPA and Maryland brought suit to enforce compliance with the Clean Water Act, and settled in 2002 with the city of Baltimore to “end the years of chronic discharges of millions of gallons of raw sewage into city streets and local waterways.”⁴³ The settlement decree gave Baltimore 14 years to completely overhaul the sewage system, but between 2010 and 2012, over 7,000,000 gallons of raw sewage spilled into Baltimore’s streams and harbor.⁴⁴ In 2015, the Baltimore Department of Public Works received 5,000 reports of sewage basement floods.⁴⁵ Because Baltimore has not been able to meet its initial compliance deadline, Baltimore now has until 2033 to comply with the consent decree. That means local residents have to wait a total of 31 years from settlement to compliance. This schedule is unacceptable. The Federal Government should have immediately provided additional financial support to Baltimore to meet upgrade needs to help the city comply within the original timeframe. In the future, the Federal Government should immediately use funding from programs like WIFIA or a clean water trust fund to help these communities meet clean water standards as quickly as possible. To meet this goal, Congress must significantly increase Federal water infrastructure funding.

Thank you for the opportunity to testify today. I look forward to continuing to assist the Subcommittee as it continues to address these challenging and critical issues.

Mrs. NAPOLITANO. Thank you for your testimony, Ms. Heaps.

And now I will defer to the chairman of the full committee, Mr. DeFazio, for any comments he may have.

Mr. DeFazio, you are recognized.

Mr. DEFAZIO. Thank you, Madam Chair.

I was over speaking to the airports about their needs and unfortunately could not be here at the beginning of the hearing.

I did want to provide this small recognition of your chairpersonship, chairwomanship [passing a box to Mrs. Napolitano].

Mrs. NAPOLITANO. Thank you very much.

Mr. DEFAZIO. However one properly says that. Chair, just chair.

⁴² “An app that tracks water use in real time so Californians can save in the drought,” Fast Company, Aug. 5, 2014, <https://www.fastcompany.com/3033873/an-app-that-tracks-water-use-in-real-time-so-californians-can-save-in-the-drought>.

⁴³ EPA, “City of Baltimore, Maryland, Sewer Overflows Settlement,” <https://www.epa.gov/enforcement/city-baltimore-maryland-sewer-overflows-settlement>.

⁴⁴ Blue Water Baltimore Consent Decree Fact Sheet, https://www.bluewaterbaltimore.org/wp-content/uploads/BWB-Baltimore-City-Consent-Decree-Fact-Sheet-7-31-13_link.pdf.

⁴⁵ “Raw sewage has been leaking into Baltimore’s harbor for 5 days, city says,” Baltimore Sun, Aug. 23, 2016, <http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-sewage-updates-20160823-story.html>.

And you know I feel very strongly about the Federal Government's role in this. I was a county commissioner when my two largest cities, Eugene and Springfield, and I live in Springfield, for years could not agree on even putting their waste together. But when I got on the county, we finally formed a Metropolitan Wastewater District, and we built out a system that has served us well, and the population has just about doubled in the time period since I was a commissioner.

And we are still not at capacity, but we are able to do that because we got a massive infusion of funds from the Federal Government. We got an 80/20 share. We put up 20; they put up 80.

And then in the rates, we put in rates basically an additional charge, but the rates were very affordable, to build a capital fund to replace the system when it wears out. So, I mean, it was a great investment by the Federal Government, and other communities certainly need that partnership.

I think we have had some great examples. I really like the—I just unfortunately only came in to hear New Jersey and did not hear the others—but the idea of building your new system to be resilient, self-sufficient in terms of energy. You know, those are really great points, and the fact that you were able to do it without a rate increase is fairly astounding.

What is the interest rate on the SRF? Do you know?

Mr. KRICUN. It is less than 1 percent, and that makes the difference between go and no go.

Mr. DEFAZIO. Wow.

Mr. KRICUN. Because the interest rate is so low and spread it over 30 years. So we can do that without raising rates.

Mr. DEFAZIO. Right.

Mr. KRICUN. The conventional rate would be like 4½ to 5 percent. We would have to raise rates significantly in order to do the same thing.

Mr. DEFAZIO. Right. When we had a select committee on privatization a few years ago appointed by Chairman Shuster, at the beginning there was a lot of enthusiasm among some Members on the idea that these should be private-public partnerships.

By the end, most Members agreed that it just was not going to work because of the cost and the expected rates of return that many of the P3s want. There is no one who is going to lend you money at less than 1 percent in the private sector. I mean, they are looking at very high rates of return.

So I want to thank the chairwoman for convening the hearing. I want to look into some of the other issues that were raised about the examples of the "right to water" and those things.

Hopefully, we can not only reauthorize the SRF, but look at other ways that we can help communities that are very low income or disadvantaged in other ways to get what I think I would agree with the panel should be a right, a right not to pollute with wastewater and a right to have clean, potable, and safe drinking water.

So with that, Madam Chair, I thank you for holding this hearing.

Mrs. NAPOLITANO. Thank you, Mr. DeFazio, and I agree with you.

Mr. DEFAZIO. Are you going to show your gift?

Mrs. NAPOLITANO. A gavel with my name on it. Thank you. Thank you very much, Mr. DeFazio. Much appreciated.

We start the questions off, and I will have 5 minutes to do it just like everybody else.

The first question for Ms. Flowers, and I was shocked to read your testimony and learn that over 30 percent of the samples from Lowndes County tested positive for hookworm, a disease no longer thought alive in this country.

What does it say about the Federal Government's commitment to clean water and healthy communities, that people in this country are still suffering from hookworm?

Ms. FLOWERS. I think what it says about the Federal Government is that there are some people that have been left behind, and when we heard about Flint and what happened in Flint, we often said that part of Flint's problem was flawed infrastructure.

There are large parts of the United States that have no infrastructure at all. And for me having grown up in that area, I thought that was normal until I went to other parts of the country and saw that it was not.

And it is even more astounding when the U.N. Special Rapporteur on extreme poverty, who I invited to come to visit Lowndes County, saw that and said that what he saw there was uncommon in the First World.

Mrs. NAPOLITANO. Well, it just is unreal, to be honest with you, and I think we have learned a lot, and we hopefully will address it in the future, both in the FDA and the EPA and all the other agencies that should have been looking for that.

My next question for Ms. Taylor, in your testimony you talk about how automation has displaced workers. It seems like Detroit experienced unemployment and declining rate base.

Because of that, residents are unable to pay their bills, including water, and are faced with water shutoffs and additional consequences. You note it in your testimony.

In your opinion, do shutoffs help address the issue of affordability or do they contribute to more poverty?

You also discuss in your testimony the idea of addressing affordability based on the customer's ability to pay. Why is that a preferred approach to shutoffs?

Ms. TAYLOR. Shutoffs highlight poverty. Shutoffs mean that whoever is in charge of making certain that citizens are safe are asleep at the wheel. Shutoffs do not have to occur if, in fact, there is a priority set that establishes water and access to water and clean sanitation as a human right.

If we start with that as a priority, then what we do as mothers and fathers, like we would do in our homes, we set policies based on what the priorities are.

So if you have shutoffs like I have in my city, thousands and thousands, I remember the first shutoff case. A young woman had two jobs, and she lost them both. She had four little girls, and they were taken out of the house and put into three foster care homes.

The foster care people pay \$465 per child. The water bill was only \$1,100. The children stayed in foster care for 18 months. That becomes an issue.

So what shutoffs do is that they highlight the problem, and they most certainly contribute to ongoing poverty.

Mrs. NAPOLITANO. I am sorry. Mr. Graves was my prior chair, and I was welcoming him back to the committee.

Thank you very much for your testimony.

The question for Ms. Heaps, you mentioned you chaired a workgroup of National Environmental Justice Advisory Council, which wrote a report on EPA's role in addressing urgent water infrastructure needs of environmental justice communities.

Would you please give a copy of that report to this committee? We have not seen that.

Ms. HEAPS. Yes. It is being delivered to Administrator Wheeler this week. As soon as I have the go from EPA, I would be happy to deliver it to you.

Mrs. NAPOLITANO. Thank you.

You have just heard examples of what is happening in Michigan and Alabama and how long communities or individuals may not be able to afford clean drinking water and wastewater services.

In your opinion, what can we do to ensure every American in every community across the country has access to these utilities?

Ms. HEAPS. I think there are three things: a shift in how we view water; the actual funding issue, Federal funding, increasing Federal funding; and guaranteeing community participation in developing solutions.

Congress can take a huge role in leading a fundamental shift of how we as Americans view water, from viewing it as a commodity to viewing it as a human right. Our Declaration of Independence views life, liberty, and pursuit of happiness as an inalienable right, but there is no life without water.

We need to recognize this and find ways that everyone living in America can have access to water for life and sanitation for life.

Second, we need more funding, and I can think of at least five different types of funding: the Clean Water and Drinking Water SRFs to support infrastructure at the utility level; programs like WIFIA, which provides supplemental funding for significant projects. That has been a huge game changer, especially in San Diego. They just got a \$16 million WIFIA grant for Pure Water, a San Diego project which is in direct potable reuse, which is addressing not only San Diego's drinking water issue but their sewage issue as well.

We need money for water affordability programs to support utilities adopting customer assistance programs.

We need block grants that go straight to the customers. Clean Water SRF is great, but it trickles down from the Federal Government to the States, the utilities, and then the utilities might get it to the customers. We need something directly to the customers.

And then also I think we also need big funding grants for our most critical issues, like dealing with these rural sewage issues.

Mrs. NAPOLITANO. Thank you very much.

I think I had better go on to the next Member. Questions from Mr. Westerman?

Mr. WESTERMAN. Thank you, Madam Chairwoman.

And thank you to the witnesses for your testimony. Ms. Flowers, as you talked about your life experiences, it kind of took me a little bit back down memory lane.

I know growing up in rural Arkansas. The little country church I went to as a kid had a single hole outhouse, which was the sanitary facilities there. Now, it cut down on the number of church members getting up and going to the restroom during church. You only went there if it was an absolute emergency.

But I think sometimes we forget to appreciate how far we have come when we are looking at where we need to be. I know my parents, not my grandparents, but my parents talked about when they got running water and electricity in their homes, and then my grandparents saw much more technology advances in their lives.

So as we look at this issue and affordability seems to be a major problem, and we have talked about that some here, and there are always two sides to the coin on affordability.

For one thing, I think we put regulations in place sometimes that falsely drive up the costs that need to be there. There is this concept of diminishing returns. You can try to do something perfect, but at some point, the cost greatly exceeds the benefits.

And, Mayor Condon, you mentioned in your written testimony and talked about State water quality standards for PCBs at 7 parts per quadrillion. It was a good illustration you used there. You cannot even measure that, but it still is a standard that is out there.

And I know I used to serve in the Arkansas Legislature, and one of the first occurrences I had to deal with was a situation like that. I had constituents come in and tell me that in their drinking water system, the dissolved mineral content in their drinking water did not meet EPA standards, and they were going to have to put demineralization equipment in for their drinking water.

Now, to country folks, you are telling them this is safe to drink, but you cannot water your grass with it, and sometimes it does not make sense.

So I do not think that just throwing money at the problem is always the answer. I think there are ways we can be smarter about how we put the policies and standards in place.

Mayor Condon, I wanted to get you to elaborate a little bit on that, and also maybe an idea of, you know, what is good for a major city versus a rural area.

Are there certain standards that could provide sanitary sewer systems and clean drinking water, but not have the extra cost added onto it that you might see in a larger metropolitan area?

Mr. CONDON. Thank you for the question.

You hit the nail on the head. I talked about originally when I came into office, the expected cost of our program was about \$500 million, and literally in my inbox were two contracts that were waiting to be signed for, I believe, about \$38 million just to manage that.

As we came back to DC this time in 2012, that is where I was presented with a choice. "Mayor, ask for a consent decree and blame it on us or we are thinking about this idea of integrated planning."

So we cut about \$150 million out of that cost, and they go, "Well, you are not meeting the regulation obviously. There is no way you could."

Well, the reality is what you just said. In integrated planning, there are other ways of looking at how you meet the requirement. We were going to a level, for regulatory purposes, a level that was insurmountable. We cannot even test below 170 parts per quadrillion, and our State standard is 7.

And so as you look at this, right now, as I have been lauded, I have received the national award from NACWA several years ago. I have been and our plan has been quoted in both the Obama administration and now the Trump administration from EPA that we were leading the country. We are literally doing integrated planning based off of a memo, which is not a great place to be.

So thank you for the law, but now we are ready to go sign that permit as we are in our final year of the largest infrastructure project that my community has ever seen. Yet they say, "Well, you are going to have to meet seven now."

My citizens are going to pay that bill for the next 17 years. We are one of the first in the country to sell green bonds, some \$200 million in green bonds as part of that \$350 million cost.

So now we need to meet seven. Some estimates have it up to \$1 billion to meet seven. Our wastewater treatment facility is using technology that is used for drinking water to get it to a standard to put back into our Spokane River, which is literally the center point of our community and has been for years.

And so I sit there and so as you look at it, it really is the framework that allows us to look at the cost rather than always going to try to alleviate that cost on the final end. You really need to look at the construction side of that.

We have some other 144 other contaminants that we should be looking towards to remove from our river rather than going back to PCBs to try to get to this unreasonable level that no one can actually get to or prove that you were to it.

So I have sat in many meetings with our State folks, with the EPA, and I sat here several years ago. I meet with EPA constantly, and they said, "Yes, Mayor. It is hard to justify."

Well, I have to justify it to my citizens. That is the reality. So as we look at this and as you look at these programs, regulatory innovation and innovations to meet those requirements are so key.

I will finish with this, and that is as we look at these programs, especially in a delegated State like ours, our State has never had a variance to meet this.

Mr. WESTERMAN. Our graceful chair is not going to show me mercy if we do not yield back.

Mrs. NAPOLITANO. Thank you very much.

Mr. Espaillat, you are on.

Mr. ESPAILLAT. Thank you, Madam Chair.

Thank you to the witnesses for being here.

The Clean Water State Revolving Fund and its sister program, the Drinking Water State Revolving Fund, are of vital importance to New York City and New York State and cities around the country really.

The New York City Department of Environmental Protection owns and operates one of the largest wastewater collection and treatment systems in the world with 96 pumping stations and 14 treatment plants.

While our waterways in the New York area are cleaner now than they have been in a century; in fact, the Hudson River right now is a playground for sports and other activities. There is still so much work to be done.

In Upper Manhattan, combined sewer overflow tanks release gallons of dirty water directly into the Hudson whenever too much rainfalls happen quickly. This happens on a regular basis. So any time you have storms, untreated sewage water is released into the Hudson where people are kayaking and doing water sports.

We saw this happen all over the city during Super Storm Sandy as well, when not only rainfall, but also storm surge waters overwhelmed our system, damaged our infrastructure, and dirtied our waterways.

After the storm, it was determined that part or all of our 14 treatment plants and more than half of our pumping stations are at risk and could suffer more than \$1 billion in damage in a single storm or flood.

New York has been putting FEMA resiliency funds to work in order to make upgrades to our clean water system, but the clean water state we have all been for and is still so vital for long-term upgrades.

A city of nearly 9 million people can witness a great damage to our clean water and environment if we do not invest in maintaining our water infrastructure. The companion impacts of climate change make this work even more critical.

New York City has a wastewater resiliency plan that calls for critical equipment to be protected to the 100-year base flood elevation plus an additional 32 inches to account for sea level rise. But New York and other cities around the country simply cannot meet this challenge without Federal investment. So the buck stops here. This is a deep pocket issue, and we must be a full partner.

Federal funding through the Clean Water State Revolving Fund will go towards raising low lying wastewater treatment facilities and other ways to make them more resilient. But even more important, the Clean Water SRF will help make the system greener.

New York City would like to upgrade all of our wastewater plants to replace their engines with ones that use cleaner natural gas and even green energy. This will not only make our water cleaner, it would at the same time make our air cleaner by reducing emissions, and it helps to combat climate change by reducing our footprint.

So this is a major, major endeavor, and we need money. And so in an era where we see the White House speaking about budget cuts and we are here sitting in the Transportation and Infrastructure Committee trying to wrestle with a potential major infrastructure bill, what are you recommending about the money, the green money, that must come to ensure that we, in addition to some of the measures that, for example, have been taken in Spokane; what are you recommending that we do to make this happen before the infrastructure in America collapses?

Mr. KRICUN. Well, we have been very lucky with the State Revolving Fund on both of the issues you described. Camden City has a combined sewer system, and we have used the State Revolving Fund to upgrade our wastewater treatment plant, make it bigger; to upgrade Camden City sewer system to allow it to convey more flow to the plant; and we have also greened 100 acres for a green infrastructure program, all funded through the SRF, to capture 100 million gallons of stormwater by soaking it through the ground.

And then good begets good. Because we now have 100 acres of parkland that we have to manage, we used an AmeriCorps grant to hire 240 at-risk youth between 18 and 25 to maintain the green infrastructure.

So green infrastructure not only has a functional benefit of capturing stormwater, but also greens the city, has those benefits, but also there are green job opportunities.

On the green energy side, through the SRF we will have eliminated combined sewage flooding for up to the 1-inch storm in Camden by the end of 2020.

And then for green energy, we are using the SRF again to make our plan completely resilient. We will be off the grid by the end of 2020 by using the SRF to build a district facility and a combined heat and power system to turn our sludge, our biosolids, into electricity.

So without the State Revolving Fund, we could not do that. So we thank the Government and the EPA for the State Revolving Fund and hope that you will reauthorize it and remember it is a loan program, not a grant. So it really is a hand up, not a handout.

We have to pay it back, but that low interest rate makes the different.

Mr. ESPAILLAT. Thank you, Madam Speaker.

Mrs. NAPOLITANO. Thank you, sir, for your testimony.

Mr. Webster, you are recognized.

Mr. WEBSTER. Thank you, Madam Chair.

Professor, are the rates paid for water and wastewater treatment way low, medium, too high, or is it a mix?

Ms. HEAPS. Thank you for the question.

I think the answer depends on where you are and who you ask. I think in many communities we have what is considered reasonable water and sewer rates, but many people struggle. And I think one of the challenges of setting affordable rates is that in many places, the cost of water itself is very, very cheap, and the cost of the infrastructure, the energy to move the water is what is very expensive.

So often rates are structured in a way that I have seen recommendations that say make your fixed costs of your infrastructure the base rate for all of your ratepayers, and then the cost of water, your flexible costs go beyond that.

So often what we have is for somebody who uses very little water, it is very expensive for them to just even get in the game and turn on water at their home. And if we were able to have more sliding rates that recognize very low usage of water at very low water cost, I think we could see a more equitable system and have the larger water users actually paying a more equitable cost of their burden on the system.

Mr. WEBSTER. So should the Federal Government get engaged in any way in setting rates?

Ms. HEAPS. I think there we are talking about a federalism issue, that rate setting has been a local issue and a State level issue, and unlike with energy where we have public utility commissions, often water rates are Wild West, kind of all over the place.

But I think the Federal Government can provide incentives to good policies at a local level by tying Federal support, Federal monetary support, to policies that support water affordability at a local level.

Mr. WEBSTER. So that would be like a shared expense? The better you do, the better the Federal Government will do?

Ms. HEAPS. I think we can reward systems that end up well structured to deal with both affordability and clean water compliance issues.

Mr. WEBSTER. Is the diversity playing in that somewhere? I mean, you know, I think about Florida. There is water. It is almost like a wetland, especially in the middle of south Florida, and so you can dig down a few feet, maybe 5 feet, and there's water as opposed to other places.

Now, certainly it needs to be cleaned up or whatever. However, the point is when you do septic tanks or something like that, then there is a difference than if they were done in some other State.

So does the topology play a role in that?

Ms. HEAPS. Yes, absolutely, and as Ms. Flowers' testimony demonstrated, there is no one-size-fits-all solution for every community. We need to look specifically at what engineering solutions will work and what makes sense for local communities.

Mr. WEBSTER. So but that affects rates, too. There may be a simple way to do it in one part of the country and a little more complex in another part of the country. Is that true?

Ms. HEAPS. I would agree with that, yes.

Mr. WEBSTER. OK. I yield back.

Ms. MUCARSEL-POWELL [presiding]. Thank you. I now yield to Ms. Finkenauer for 5 minutes.

Ms. FINKENAUER. Thank you, Madam Chair.

I am happy to sit on this subcommittee and be here with you all today, and thank you so much for all that you are doing. I know you are dedicated, as I am, to making sure that every single American has access to clean, safe drinking water.

It is one of our number one priorities around here, and again, thank you for being here today.

One of the things that I am really curious about because I come from the city of Dubuque and have seen some really innovative things around water quality and partnerships, and a lot of technology in regards to, well, using technology to monitor and improve water systems.

So where I am from in Dubuque, they have actually partnered with IBM's Watson Research Center where they did a smarter water pilot study for over a year. Some of you may or may not have heard of it, but where they used actually smart water meters to help reduce water usage over 6 percent, and then increased leak detection and actually the response is eightfold.

So I just kind of want to hear from you all today about intelligence systems, and specifically, how can we use technology to reduce leaks and other causes of system down time, as well as making sure that our water systems are more environmentally sustainable?

Is there anything that you have seen across the country, whether local, State level? Obviously, I know the Dubuque example, but I am wondering if you all have any examples that States or other localities have done well and anything that we should be looking at on the Federal level to either ramp up or be helpful with this.

Again, use of technology we do have and making sure that every dollar we do spend we are doing it in the best way possible and in the most efficient way possible.

Mr. KRICUN. Well, nonrevenue water is a huge problem for every community, but especially in communities, whether it is a city or rural, that are lower resourced. So, for example, the norm in a well-run system there is always going to be some leaks, maybe 10 percent. But Camden City, for example, has a nonrevenue water of over 40 percent. So that means that for every 100 gallons that go out of their water treatment system, they only get paid for 60.

Now, some of that goes for firefighting, and that is normal, but a lot of it is for leaks or unbilled revenue. So that is a huge loss for a city that needs revenue. But it is sort of a vicious cycle because if you lack the resources to find the leak, then you cannot find the revenue that you need.

So I have heard of like smart water systems, too, but usually it is a public-private partnership, which is at a much higher rate. So one thing the Federal Government could do because the technologies are out there would be through the Drinking Water SRF allow rural and urban communities to borrow and invest in that smart technology to reduce their nonrevenue water, and then that revenue would help pay back the loan. It would pay for itself.

So the problem is that many of these communities that need it the most cannot afford them.

Thank you.

Ms. FINKENAUER. Thank you. Thank you. I really appreciate it.

Mr. CONDON. I was just going to say the technology is a key component, as a city that is going to all smart meters and looking at the real time use. One is real time reporting back to the users, especially large users.

In our system we are thinking of golf courses and parks, to give people that real solution.

The other is technology and leak detection. We used more recently in-line technology that saved us some \$7 million because, of course, there are algorithms based on years and gallons through certain systems because you did not know what was under the ground. Now using certain types of technology, we were able to alleviate \$7 million that was in our capital plan.

But, again, back to the issues of partnering with technology, one is the real time reporting to use, and we will be a fully automated city here shortly through a smart city initiative. But, again, that is all privately done, which is great because they are coming to the table to demonstrate those.

But secondly is to use that sort of technology that had typically been on the wastewater side, but again, as we are here about wastewater, the real issue is the clean water solutions on the drinking water also.

Ms. HEAPS. And if I could add, technology can also benefit affordability. If you have real time reporting in residential, customers have that, and you have rates structured so that people can have control of their bill and actually use less water. People can say, "Oh, I am going to take a shorter shower today," or, "we are going to save laundry until next week," or something like that.

So it really benefits all around, both from the utility and the consumer end.

Ms. FINKENAUER. Great. Thank you all so much for your comments, and I would love to follow up on some of this as well.

And, Madam Chair, I yield back.

Ms. MUCARSEL-POWELL. Thank you.

I now recognize Mr. Babin for 5 minutes.

Dr. BABIN. Thank you, Madam Chair.

And thank you, witnesses, for being here today. I appreciate it. Mokszycki, right? Is that the way? Mokszycki?

Mr. MOKSZYCKI. Mokszycki, yes.

Dr. BABIN. Mokszycki. OK. I am sorry.

I represent a large district in Texas, nine counties, from Houston over to Louisiana. The majority of my constituents live in rural communities, and you talk about the difficulties that rural communities face with respect to and compliance with Federal regulations due to a lack of technical resources.

You mentioned that compliance is expensive. It is complex and burdensome to small communities who have minimal resources and personnel, and I can understand issues very similar to yours in my district.

Many of my constituents are suffering at the hands of overregulation from the Federal Government in many areas of their lives already. In your testimony, you lay out five provisions which aim to help target communities most in need of Federal assistance.

Do you think that these provisions are sustainable for solving the long-term issues that rural communities like ours face?

Mr. MOKSZYCKI. I think they are sustainable. I think there just needs to be enough money in the fund so that more people can participate in these rural communities.

The rural communities need the technical assistance that we get from like the Rural Water Association because for us even a small project, we had a wellhead protection project that we did in our town. It was going to cost us \$75,000. For a small rural community, \$75,000 is a lot of money.

We were fortunate that through clean water funding and through the New York Rural Water Association, their hydrogeologist did the program for us, saved us \$75,000, and our wellhead was protected. That allowed us to get this wellhead protection done because what happens in a small community is that work just does not get done if there is not some sort of outside funding to help with it.

Dr. BABIN. All right. Well, let me just follow this up. Do you see an opportunity for the private sector to bring solutions to some of these problems?

Mr. MOKSZYCKI. I do not see how that would work. It is just going to be a little bit more expensive if private entities come into the picture because they need to get paid.

Dr. BABIN. OK. And then, Ms. Flowers, these centralized wastewater recycling technologies have been proven in many rural infrastructure cases to be cost effective and a sustainable solution to rural wastewater issues.

How can we better utilize and implement these new technologies in rural or even urban communities to best maximize taxpayer dollars?

Ms. FLOWERS. Well, I think that, first of all, the technologies that have been used in our communities have not worked, and I think the first thing we have to do is acknowledge that we probably need to do something differently.

I was just in Florida where I saw there they are having problems. They have to remove septic systems because of the rising sea levels, and the water tables are rising.

I think the technologies that have been created were created for 20 years ago. We have a new reality now. We have more rain, and the technologies that the people that I am dealing with are talking about every time it rains, they are dealing with sewage coming back into their homes.

So I think one of the big problems that I have found, being a country girl myself, is that a lot of people that are making policies have never been to these rural areas. So it is hard to articulate to someone who cannot even imagine what it is like to be in a community where your cell phone does not work because with the signal you will not get it. You know, you cannot rely on GPS to go to some of these places.

And I have to tell people coming from the cities all the time you had better write those directions down or you are going to end up lost.

So the same thing is true when we deal with wastewater. I think that there has to be a concerted effort, and maybe one of the ways to address it is to put together a committee that can actually go and visit these areas and see that these technologies are simply not working.

Nobody goes to the homeowner who is on the other end when they fail.

Dr. BABIN. You bet.

Ms. FLOWERS. They go to the people who installed them.

And lastly, I think that the other problem that I have seen with the funding, the people that get the funding are not necessarily the people that need it. The business community can always get the funding. We have an example right now in Lowndes County where the business community on 65 just got funding to put in wastewater treatment because they have failed septic systems, too, but the community is left out.

Dr. BABIN. Thank you very much for that, and I appreciate that. I want to ask Ms. Taylor something real quickly.

In your testimony, you discuss the dangers of privatizing water infrastructure, and what do you think is a good balance between private entities and Government funding when it comes to water safety and infrastructure?

In addition, if you would, discuss a few policies that would allow the private sector and the Federal Government to work together in these areas. If you could, just for a few seconds.

Ms. TAYLOR. Profound question because I think all across America we are all trying to find a way to work with the Federal Government. Everybody is.

Even in this discussion today, I worry that people are not really listening. I listened to what Ms. Catherine said. Private monies coming into public dollars generally means something bad is going to happen. That is what it means.

This is not rocket science. It is not rocket activities. All we have to do is to decide that water is a human right, and if we do that, then we will establish policies and practices to make it so.

There is something to be said about throwing money at a problem. People that have money always say you cannot throw money at it. It will not fix it.

Throw money at me and watch me fix things.

Ms. MUCARSEL-POWELL. Ms. Taylor, thank you so much.

Dr. BABIN. All right. Thank you.

Ms. MUCARSEL-POWELL. The time is up. If you would like, you can always provide testimony in writing to add to that.

I now recognize Mr. Rouda for 5 minutes.

Mr. ROUDA. Thank you, Madam Chair.

And thank you, witnesses, for joining us today. I appreciate your testimony and information that you are sharing.

My district is the 48th District of California in Orange County, and we are served by the Orange County Water District and the Orange County Sanitation District. In fact, in February 2018, the Orange County Water District in Fountain Valley and the Orange County Sanitation District in Fountain Valley as well set a Guinness world record title for the most wastewater recycled to drinking water in 24 hours. They served 2.4 million residents and have certainly relied on SRFs in the past to help create world-class operations in Orange County.

But California has about \$26 billion of needs in this area, and I think federally the number is around \$270 billion. Professor, I will start with you.

You have talked about the need for massive amounts of money to address our water infrastructure needs. Can you talk a little bit about the impact climate change has on these calculations?

Because it seems like these calculations are based on historical information and not really taking into account the full potential impact of climate change if it is not adequately addressed in the very near term.

Ms. HEAPS. Yes, thank you.

And actually, I have toured that Orange County facility twice. It is wonderful.

Mr. ROUDA. It is quite impressive.

Ms. HEAPS. A wonderful facility.

I think you raise an excellent question about are we really counting cost considering climate change and resiliency for our water infrastructure. The latest numbers that I have seen from EPA on the Clean Water Act needs, at least on the Clean Water Act side, on the drinking water side new numbers came out in 2018, but on the Clean Water Act side the latest numbers are from 2012.

And that report itself acknowledges it is supposed to be a 20-year estimate, but that actually utilities often look out 5 years. So those numbers are likely very, very low.

And one of the things I would encourage this subcommittee to do is to connect with EPA and ask when the new numbers are going to be out and to specifically ask how climate change resiliency and impacts on climate change for both water and sewer are going to impact those numbers.

And then also provide guidance to the utilities, to the local municipalities as they are trying to figure that out and trying to figure out how those numbers change with new threats from climate change.

Mr. ROUDA. Anybody else on the panel want to speak to the topic?

Mr. KRICUN. Yes, thank you, Congressman.

I am from New Jersey, and so Hurricane Sandy, you know, that is climate history, and the storms from Houston, Puerto Rico, et cetera. We have seen that our infrastructure is already inadequate for how the climate is already. So there is already a significant infrastructure gap even if climate does not get any worse. So we have to address that.

But then, of course, many believe the climate change will get worse, and so that will only widen the gap. So the need for investment in water infrastructure is more important than ever, one for replacement of the water infrastructure while we have it now, but also to provide resiliency especially for vulnerable communities, from power outages, low lying areas, et cetera.

So I believe that we must close the water infrastructure gap while we can since we already see the infrastructure is inadequate, and we know that gap will only widen.

Mr. ROUDA. Thank you.

Turning a little bit, Mayor, to what I believe you talked about earlier, my neighbor to the north and Los Angeles have plans in place to reclaim the L.A. River and restore it back to a natural habitat to some degree, and I am certainly intrigued that we can do the same in my district with the Santa Ana River because I think you have shown and others have shown that there is a partnership between man-made infrastructure and natural habitat.

Can you elaborate a little bit more on the cost effectiveness of doing so?

Mr. CONDON. Absolutely. You can see in number two in my hand-out that we took this integration idea all the way throughout our city, and so now in our community, the Streets Department used to be part of the city government proper. It is now part of the Utilities Division, and they pay a franchise fee for that. But they get to design our street predominantly around stormwater.

So now our stormwater mitigation people talk about complete streets or integrated streets. Well, now we look at every square foot

that is not pavement that we did not need because we used to collect stormwater. We now can infiltrate that.

There are two other things though. There is no money for integrated projects. So I spoke about it in my testimony, which was we have to go to many different sources, line those sources up, and I feel it is dramatic for our rural partners. I have a whole department that does that.

I am in eastern Washington. We are the largest city in eastern Washington of a large congressional district, but working with Congress, if we could have an integrated fund that actually looks at all of these solutions.

The other is the regulation. Believe it or not, we could purple pipe everything, but my river has a right to that water. So we cannot actually remove it from the river and put it into purple pipe.

And number two is we have health requirements that do not allow purple pipe to go onto anywhere that is going to have human contact, i.e., parks. You cannot have purple pipe in parks. The kids play on it, yet the wastewater standard is higher than our drinking water standard. Yet health departments across this country, and perhaps regulatory, do not allow that to be into public spaces because it might have contact.

So I think you are going down the right path, but really looking at the regulations that conflict between the different components of the Federal Government.

And the final piece is we should reward these integrated projects throughout the system and have a single source for those projects.

Mr. ROUDA. Thank you.

Ms. MUCARSEL-POWELL. Thank you, Mayor Condon.

Mr. ROUDA. Thank you, Madam Chair.

Ms. MUCARSEL-POWELL. Thank you.

I now recognize Mr. Woodall for 5 minutes.

Mr. WOODALL. Thank you, Madam Chair.

And I will pick up, Mayor, where my colleague left off. It is an amazing thing that you all have done bringing economic incentives. That is easier to invest \$350 million if I can save \$150 million along the way.

I believe there should be a different set of regulations for the best actors in our community. We are using that same membrane technology in my suburb north of Atlanta. We are pumping our water back into our reservoir cleaner than we took it out just like you are.

Tell me about the efficacy from an executive's perspective of having a different set of standards for the good actors and a training wheels set of standards for those folks that we're still trying to get up to code.

Mr. CONDON. Well, thank you because I am not the nerd in the room. I am not an engineer by any means, but to see it from my perspective as running a large utility, you hit the nail on the head, which is to give rewards to those that are innovative.

I was one of the first in the country to do integrated planning, where now we are going to have trouble signing a permit because they are going to try to hold us to a standard that no technology in this community, in this country can meet.

Rather, we would like to start spending those dollars where our citizens see it. I passed a street levy, received 77 percent passage because they saw the integrated effectiveness of that, and they see the real world outcomes from that.

From my handout you see that now our CSO tanks have a playground from one of our schools. I actually had to come all the way back here to the Department of Transportation. One of our infiltration sites is land that the Federal Government owns along I-90, one of the Federal highways. It originally had been a place where a considerable amount of vagrancy had happened, and it was very unsafe for the individuals that were there.

It is now an infiltration site, but the Federal Government had never allowed this to happen because it was on their property on an on ramp. But this was how we were to look at saving that \$150 million.

The citizens see that. I come from a part of the country that is very progressive in environmental standards. But that being said, they also are very cognizant of the cost, and my citizens, one of the poorest legislative districts in the State, and as you see from the ALICE rate, you know, a family of four is left with \$400 or \$500 to pay for rent when you have taken out the utility costs.

So we need to look at these innovative approaches, but also look at somewhere in the Federal Government where you can have that integrated approach. We get points for integration, but we still are applying on multiple different locations or sources to get those dollars and then lining up the cash flow when those are due, when they have to be spent by, and it is a Rubik's Cube that is not plausible for smaller governments.

We are able to do it, but we are about 210,000. I do not think you could do it for cities that are much smaller than that.

Mr. WOODALL. But for cities north of 210,000, do you think this is a model that is applicable across the country or you have the particular leadership and the particular circumstances that you can make it work when others cannot?

Mr. CONDON. I would hope the latter. I would think the latter, but no.

[Laughter.]

Mr. CONDON. The issue is, and that is why when you simplify it and have grant pools that reward a single location for these integrated projects, I realize the difficulty. I worked in the Federal Government for some time, but you have some instances where this has happened throughout, whether it be at the Department of Transportation, and the grants that came out that looked at integrating different projects.

So I think it can be done, especially on the authorization side, especially when we look at policy of how that could be rewarded for innovation across this country. Because we can drop that cost and get real benefits to our citizens.

Believe it or not, most of my citizens, thankfully, when they flush the toilet, it flushes the same way before we did \$350 million and the same way afterwards. So they have gotten to see the ability and see the real outcomes, and they have seen that in their infrastructure in my community and really have rewarded us and given us that confidence to continue down this path.

Mr. WOODALL. As we have seen water costs in major cities go up 50 percent over the last 10 years, with Atlanta and Seattle, your neighbors to the west, the two highest in that measure, yes, constituents are——

Mr. CONDON. I got elected because of water rates.

Mr. WOODALL. Is it Mr. Kricun? Am I pronouncing that correctly?

Mr. KRICUN. Yes, sir.

Mr. WOODALL. Your peer-to-peer sharing idea is really interesting to me. Who is doing that the best today? Because sometimes I see my communities compete with one another and so they do not want a partner to help each other succeed.

Who is doing it well and what can we do to make that more successful going forward?

Mr. KRICUN. Well, thank you.

The National Association of Clean Water Agencies and EPA and Water Environment Federation are working together to develop a 50-State peer-to-peer initiative in which utilities with larger resources would help those with less.

So, for example, the way our regional authority helps Camden City, Camden City is one of the poorest cities in the country. Our county is a regional authority with some affluent communities as well. So we partner with them.

In New Jersey, the commissioner has developed a peer-to-peer program with eight utilities helping the more challenged cities across the State. We are hoping to replicate that across the country.

San Francisco is also doing a lot in the bay area. Actually the city of Atlanta is very involved in water equity issues as well with your Commissioner Kishia Powell.

So I mean, there are a lot of examples. The idea is how to coalesce that into a national initiative since nobody should have to deal with these issues.

And the thing is, real quickly, in the public sector we are willing to share the information. So we are glad to share it. We just need mechanisms to help facilitate that sharing, those partnerships.

Mr. WOODALL. I had many more questions for many more witnesses, Madam Chair, but I yield back.

Ms. MUCARSEL-POWELL. Thank you, Mr. Woodall.

I would like to recognize myself now for 5 minutes.

Thank you so much to the witnesses here this morning.

I represent Florida's 26th District. It is, as I say, ground zero for the effects of climate change, and water is a daily topic for us. As you can imagine, we have had serious issues threatening the water infrastructure in my community dealing with flooding.

The water continues. We have septic tanks, about 90,000 septic tanks in Miami-Dade County. This was done because it was less costly at the time. So a lot of overdevelopment without really providing the appropriate municipal infrastructure that is needed.

You have all seen the algae blooms that we have been suffering from in both of our coasts. There is also such a divide in Miami-Dade County. We have some of the highest number of millionaires that live along the coastal communities, but then the average income for people living in most of the county is about \$44,000. So

you can imagine how costly it is for our communities to actually invest in the appropriate infrastructure.

So programs like the Clean Water SRF are crucial, and we have used the SRF program to obtain low interest loans to move residents from septic to sewer, constructing treatment systems to improve the water quality of the nearshore waters and protecting the Florida Keys National Marine Sanctuary.

So I would like to start with Ms. Flowers, something that you said a little bit earlier. You mentioned that you saw some creative solutions to the septic tank issues in south Florida.

If you could, please elaborate on that.

Ms. FLOWERS. Actually I did not see creative solutions, but I was at the University of Florida recently, and they were talking about the problems they were having with wastewater treatment there using septic systems, and they said the problem is because of the sea level rise and the water tables are rising, and as a result, the technology is failing and is leaching into the groundwater and ends up in the rivers and so forth, which creates the algae bloom and sometimes fish kills.

So what I am hoping will come of this, if I had a magic wand, I would try to partner with some of the agencies that are already dealing with innovative technology like NASA for an example. I am trying to get to NASA because they treat wastewater in outer space, and people think I am crazy when I say this, but I believe that we could partner with them and come up with a way to treat wastewater in an innovative way that is affordable that you can go to a Lowe's or Home Depot and buy it like we do with our HVAC system and hire a technician to go and install it.

But we have to start thinking out of the box. The way we are thinking is for technology or for a time that was when I was a child. Now at the age of 60, you know, I never could have imagined. I remember when we had a party line. Now we have cell phones, you know. Some people do not even know what I am talking about.

But anyway, now we have cell phones and we cannot even imagine what it was like to live without them. I think we can do the same thing with wastewater, but I think we have to get to the point where we can start thinking out of the box, and I think that we have such ingenuity in this country that if we can galvanize it and through possibly a public-private partnership and come up with the kinds of solutions that will help people in Miami, people in Alabama.

In Alabama, they tell us that the best source for treating wastewater are sandy soils. When I went to Florida, I saw that was something different.

So we really need to find a way to develop the type of technologies that do take into account climate change.

Ms. MUCARSEL-POWELL. Thank you, Ms. Flowers. I could not agree more with you.

I think that it is critical to continue to talk about this topic. That is why this hearing is so important. There is nothing more important I do not think to any of us than clean drinking water, access to clean water, even for our coastal communities so that our chil-

dren's health is protected. I have a quick question now for Ms. Heaps.

I am curious. You mentioned the right to water law that was enacted in California. Can you just briefly comment on what that entails and how that has worked for California? I am curious to see if that is something that we can do in Florida as well.

Ms. HEAPS. I am happy to. I see we are almost out of time. So I am happy to actually put something in writing so I can address it better, but it basically provides guidance for implementation of that human right to water across State agencies that deal with water and also provides guidance for local utilities as they are making decisions.

Ms. MUCARSEL-POWELL. OK. And just lastly, if I am allowed, I would like to ask for unanimous consent to include in today's hearing record an article from Bloomberg Business Week, "Miami Will Be Underwater Soon. Its Drinking Water Could Go First."

Without objection, so ordered.

[The information follows:]

Article Submitted for the Record by Ms. Mucarsel-Powell

Bloomberg Businessweek

<https://www.bloomberg.com/news/features/2018-08-29/miami-s-other-water-problem>

MIAMI WILL BE UNDERWATER SOON. ITS DRINKING WATER COULD GO FIRST
THE CITY HAS ANOTHER SERIOUS WATER PROBLEM.



A rock lake at the edge of Miami-Dade County.

PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

One morning in June, Douglas Yoder climbed into a white government SUV on the edge of Miami and headed northwest, away from the glittering coastline and into the maze of water infrastructure that makes this city possible. He drove past drainage canals that sever backyards and industrial lots, ancient water-treatment plants peeking out from behind run-down bungalows, and immense rectangular

pools tracing the outlines of limestone quarries. Finally, he reached a locked gate at the edge of the Everglades. Once through, he pointed out the row of 15 wells that make up the Northwest Wellfield, Miami-Dade County's clean water source of last resort.

Yoder, 71, is deputy director of the county's water and sewer department; his job is to think about how to defend the county's fresh drinking water against the effects of climate change. A large man with an ambling gait, Yoder exudes the calm of somebody who's lived with bad news for a long time.

"We have a very delicate balance in a highly managed system," he said in his rumbling voice. "That balance is very likely to get upset by sea-level rise." What nobody knows is when that will happen, or what happens next.

From ground level, greater Miami looks like any American megacity—a mostly dry expanse of buildings, roads, and lawns, sprinkled with the occasional canal or ornamental lake. But from above, the proportions of water and land are reversed. The glimmering metropolis between Biscayne Bay and the Everglades reveals itself to be a thin lattice of earth and concrete laid across a puddle that never stops forming. Water seeps up through the gravel under construction sites, nibbles at the edges of fresh subdivisions, and shimmers through the cracks and in-between places of the city above it.

Miami-Dade is built on the Biscayne Aquifer, 4,000 square miles of unusually shallow and porous limestone whose tiny air pockets are filled with rainwater and rivers running from the swamp to the ocean. The aquifer and the infrastructure that draws from it, cleans its water, and keeps it from overrunning the city combine to form a giant but fragile machine. Without this abundant source of fresh water, made cheap by its proximity to the surface, this hot, remote city could become uninhabitable.



One of Miami-Dade's many canals, which the county relies on to drain its flat surface when it rains. Yoder calls the canals "probably the most complex" water management system in the world.

PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

Climate change is slowly pulling that machine apart. Barring a stupendous reversal in greenhouse gas emissions, the rising Atlantic will cover much of Miami by the end of this century. The economic effects will be devastating: Zillow Inc. estimates that six feet of sea-level rise would put a quarter of Miami's homes underwater, rendering \$200 billion of real estate worthless. But global warming poses a more immediate danger: The permeability that makes the aquifer so easily accessible also makes it vulnerable. "It's very easy to contaminate our aquifer," says Rachel Silverstein, executive director of Miami Waterkeeper, a local environmental protection group. And the consequences could be sweeping. "Drinking water supply is always an existential question."

County officials agree with her. “The minute the world thinks your water supply is in danger, you’ve got a problem,” says James Murley, chief resilience officer for Miami-Dade, although he adds that the county’s water system remains “one of the best” in the U.S. The questions hanging over Miami and the rest of Southeast Florida are how long it can keep its water safe, and at what cost. As the region struggles with more visible climate problems, including increasingly frequent flooding and this summer’s toxic algae blooms, the risks to the aquifer grow, and they’re all the more insidious for being out of sight. If Miami-Dade can’t protect its water supply, whether it can handle the other manifestations of climate change won’t matter.

The threats to the Biscayne Aquifer are unfolding simultaneously, but from different directions and at different speeds. In that way, Miami’s predicament is at once unique and typical: Climate change probes a city’s weaknesses much as standing water finds cracks in the foundation of a house.

Twenty minutes east of the Northwest Wellfield sits the Hialeah Water Treatment Plant. With its walls built of coral rock in 1924, Hialeah was Miami’s first major water processing facility. The water drawn from the Northwest Wellfield is piped here to be cleaned along with water from another cluster of wells that pull from straight beneath the plant. As climate change worsens, this plant will matter more and more.



Inside the Hialeah water treatment plant.
 PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

A few blocks from the Hialeah plant, buried beneath what's now a maintenance yard for the county's Metrorail trains, lies a 1.2-acre zone that the Environmental Protection Agency has ranked the second-most hazardous Superfund site in Miami-Dade. From 1966 until 1981, the land was used by Miami Drum Services Inc., a company that rinsed containers for an assortment of toxic chemicals, then disposed of the residue onsite.

County and State officials concluded in 1981 that the operations were contaminating the aquifer; the EPA later said the space was leaching arsenic, cyanide, mercury, nickel, lead, cadmium, chromium, chloroform, and oil into the groundwater. The county forced Miami Drum Services to abandon the property and spent 2 months removing all "visibly contaminated soils."

Until then, water from the Biscayne Aquifer required minimal treatment: The plant would add lime to soften it and chlorine and ammonia to disinfect it, then fil-

ter out remaining particles. Once fluoride was added to help prevent tooth decay, the water would be piped to people's taps. In 1992, in response to the risks posed by toxins from the Miami Drum Service site and others near it, the county added a new stage, running the water through "air stripping" towers designed to remove toxic contaminants.

In 2014 an EPA report warned that "flooding from more intense and frequent storms" could push toxins from Superfund sites into undergroundwater sources like the Biscayne Aquifer. Anna Michalak, a researcher at the Carnegie Institution for Science in Stanford, Calif., says climate change means that U.S. cities are "entering a state that these systems were not built for." She adds: "As the incoming water quality becomes either worse or just less predictable, you have to have more and more systems in place to deal with all of that."

In South Florida that new state is already here. The amount of precipitation that falls during the heaviest storms has increased by about 7 percent in Miami-Dade County since the 1960's, according to research by Constantine Samaras, an associate professor of civil and environmental engineering at Carnegie Mellon University. Although the disparity might not seem like much, it could mean the difference between a lot of rain and an outright flood. The Union of Concerned Scientists estimates that by 2045, as much as 29 percent of Miami Beach and 26 percent of Key Biscayne could be "chronically inundated," which UCS defines as flooding twice a month.

Earlier this year, Pamela Cabrera, a graduate student at Harvard, mapped the Superfund sites in Miami-Dade County and their proximity to wellfields. Her hypothesis was simple: Increased flooding could dislodge the toxic chemicals that remain on Superfund and other industrial sites, pushing them into the aquifer. According to Cabrera's map, the Miami Drum site is 750 feet from the Hialeah Wellfield. A dozen other Superfund sites are scattered throughout the county. More severe flooding or rainstorms could overwhelm Hialeah's controls or move toxins through the aquifer in new ways, sending them into one of the wellfields not equipped with the same controls.



Beneath this patch of ground is Miami-Dade's second-most polluted Superfund site, which was contaminated with arsenic, mercury, and cyanide. The site was turned into a maintenance yard for the county's Metrorail system.

Photographer: Anastasia Samoylova For Bloomberg Businessweek

In 2014 a storage tank in West Virginia leaked methylcyclohexane methanol, a chemical used to process coal, into the Elk River just upstream from Charleston's water intake center. The spill rendered the city's water undrinkable, leaving 300,000 people with no water for days. "It's extremely important for everybody to look upstream of their drinking water systems and protect them," says Gina McCarthy, who ran the EPA under President Obama and now directs the Center for Climate, Health & the Environment at Harvard. She cites Charleston, as well as Toledo, Ohio, which had to shut down its drinking water supply later in 2014 because of an outbreak of cyanobacteria, as evidence of how a shock to the drinking water supply can thrust a city into chaos.

Miami-Dade has regulations and testing procedures in place to prevent or detect contamination of the aquifer. Asked about the risk, Yoder chooses his words carefully. “I think it’s a fair question to ask,” he says, but adds that the county at least has a history of dealing with those threats, noting its experience with the Miami Drum Services site.

Michalak warns that’s too easy. “Invariably,” she says, “we discover that we’re not quite as clever as we thought.”

In 1997 the State approved large-scale limestone mining on the border between Miami-Dade and the Everglades. Pulling the rock out of the ground entails blasting holes in the aquifer, which almost immediately fill with groundwater to become dusty blue pools. Locals refer to them as “rock lakes,” although they’re not the kind that draw families for weekend picnics.

The mines happen to surround the Northwest Wellfields. The same conditions that made the area suitable for water wells—vast open space with no development in sight—also made it ideal for massive rock pits. Environmentalists have warned that the rock lakes act as a superhighway for pollutants from the mining, driving them straight to the heart of the aquifer. In 2005 one of the Northwest wells registered five times the Federal limit for benzene, a chemical used to blast out rock that’s been linked to leukemia, according to the American Cancer Society. The county ordered the well, along with four adjoining ones, temporarily shut down. Yet regulators never successfully identified the source of the benzene, and the mining continued.

Yoder pulled over beside a rock lake that was lined by gravel roads and surrounded by swamp. The photographer with us made a half-hearted joke about alligators and then got out. Yoder and I stayed in the truck; the air outside was dusty and hot, and neither of us was particularly keen to take our chances with whatever might crawl out of the ditch.



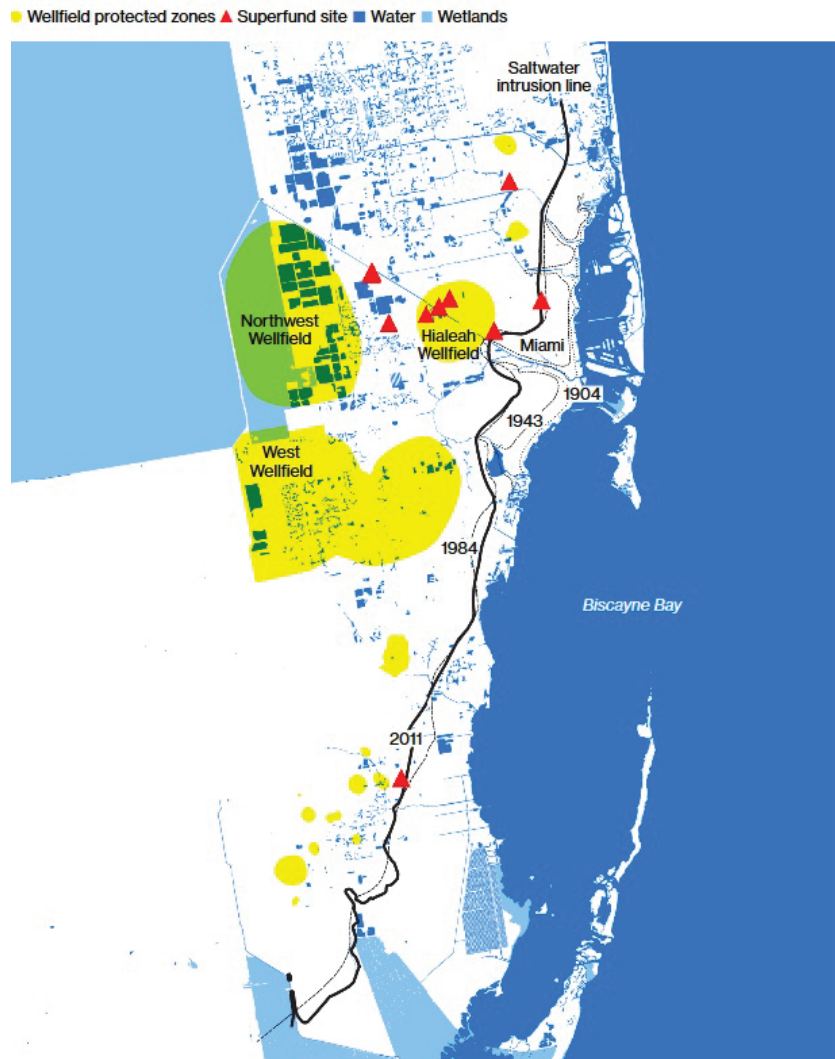
Yoder at the Hialeah treatment plant. He says the county’s drinking water infrastructure “is very likely to get upset by sea-level rise.”

Photographer: Anastasia Samoylova For Bloomberg Businessweek

The decision to surround the county’s most pristine wellfields with rock mines reflected a compromise, Yoder said. The Miami-Dade Limestone Products Association Inc., which represents some of the area’s biggest mining outfits, insists mining has no effect on the aquifer. Better that than to surround the wellfields with houses, Yoder said, adding: “More developed areas had higher contaminants.”

More worrisome than the mining itself is the whole vast world of toxicity to which the mining has opened up the aquifer. “The rock belt is going to become a place where contaminants can enter and move deeper,” says Philip Stoddard, the mayor of South Miami, one of the cities in Miami-Dade County that’s most exposed to sea-level rise. As flooding and rainstorms get worse, Stoddard warns, they’ll move surface water around the county in increasingly unpredictable ways. “You’ve always been able to count on the water going west to east,” drawing runoff away from the water supply, he says. “What happens when it starts going back toward the wellfield? You don’t have to be a genius to figure out it could be a bad thing.”

The Sea’s Slow Creep Inland Threatens Freshwater Wells



Data: U.S. Geological Survey, EPA, OpenStreetMap

Then there’s the feces. As developers built out Southeast Florida, they found that instead of connecting each new home to the local sewer system, it was often easier to install septic tanks. Miami-Dade has about 90,000. “It was the magic carpet for quick, cheap development in Florida,” says Brian Lapointe, a research professor at

Florida Atlantic University who focuses on the role of septic tanks in water contamination. These tanks are typically used in rural areas where homes are too far apart to justify connecting them to a central sewage system—but also in places where residential construction happens faster than municipal infrastructure development. Septic tanks trap solid waste, which is supposed to be pumped out, while the liquid stuff drains into the soil, where gravity and time filter out bacteria and whatever else is in it before it reaches groundwater. In Southeast Florida, that groundwater is especially close to the surface—and rising.

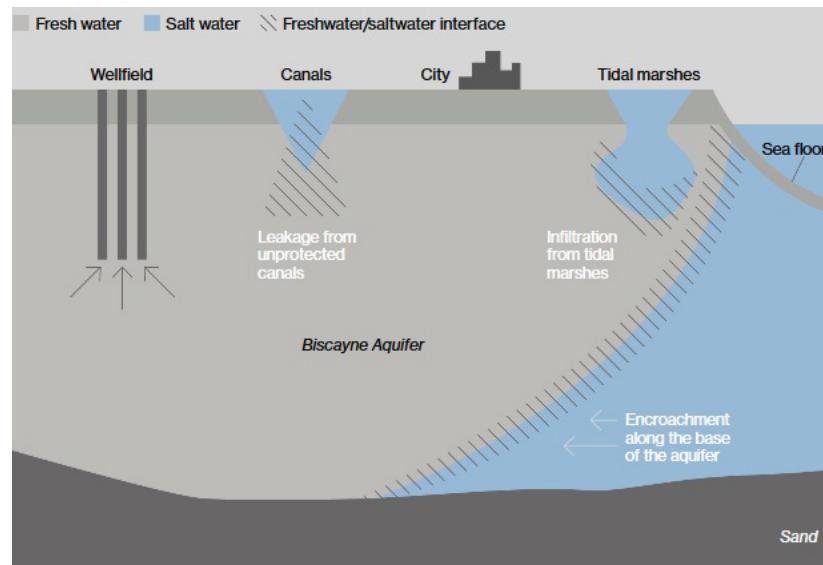
The State requires at least two feet of dry soil between the bottom of the drainage field and the top of the water table, but Lapointe says that during the wet season, the groundwater in parts of southern Florida already comes above that two-foot threshold. More intense flooding and rainstorms will swell the water table further, on top of the gains caused by sea level rise, sending partially treated human waste into the aquifer. That waste can contain *E. coli* bacteria, which cause diarrhea, vomiting, and even kidney failure. High levels of nitrates, another component of untreated waste, cause what's called blue baby syndrome, in which infants' blood can no longer carry sufficient oxygen.

Lapointe adds that one of the ways researchers track septic-tank contamination is by tracking the levels of acetaminophen in the groundwater. "People's medications are coming with that septic-tank effluent." The wonders of the human digestive system are many and varied, containing any number of other bacteria and viruses—"all these other organic compounds that may or may not be affected by the treatment at the utility plant," he says.

How long does Miami have before the water table overwhelms the septic system? Officials, including the South Miami mayor, worry that the point of failure is closer than people realize. Says Stoddard, "I'm convinced that some of those septic systems are working by force of habit rather than by the laws of physics."

The slowest-moving threat to Miami's drinking water is also the most sweeping: As the ocean rises, salt water is being pushed into the limestone, forming a wall of brine that's creeping inland along the aquifer's floor. The county's wells are essentially giant straws drawing water from 60 feet to 80 feet beneath the ground. As the saltwater front advances westward across the aquifer, reaching each of those intake valves and enveloping them in saline water, it risks rendering them useless in succession—a sort of Sherman's March in reverse, as prosecuted by the sea.

How Salt Water Gets Into the Biscayne Aquifer



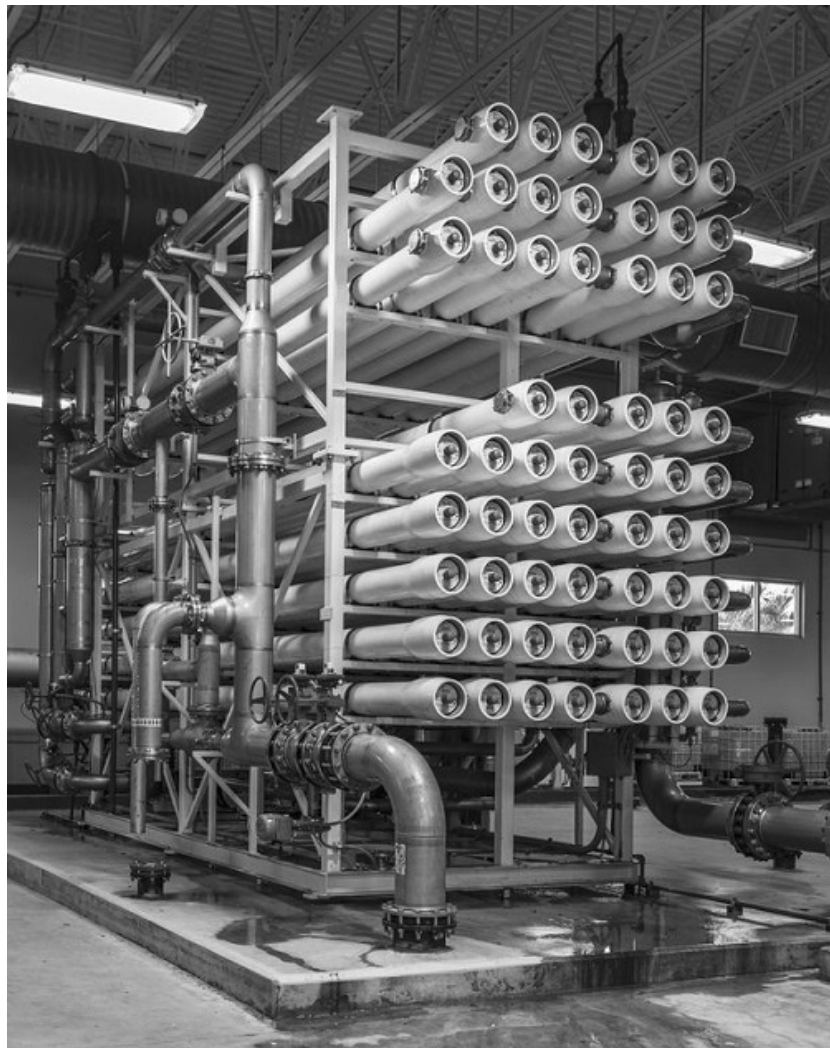
Not to scale

Data: U.S. Geological Survey

Projecting the pace of saltwater intrusion is fantastically complicated, all the more so because the State and Federal Governments are still debating whether and how

to proceed with a massive, still-unfunded pledge to restore the Everglades. Doing this could increase the flow of fresh water into the aquifer and thus slow the salt line's inland creep, but the uncertainty means the county's plans extend only through 2040, by which point Yoder and others officials say they should still be able to use all but one of their current wellfields. Regardless of the pace of seawater incursion, the Northwest Wellfield, almost 20 miles inland, will be one of the last to succumb; short of cutting into the Everglades, there's no farther to go.

Except farther down. In 2013 a new facility west of the Hialeah treatment plant began pulling brackish water up from 1,000 feet beneath the surface, below the Biscayne Aquifer, then pushing that water through a series of plastic membranes, a desalination process called reverse osmosis. The process requires as much as 200 pounds per square inch of pressure, which consumes about 5,000 kilowatt-hours of electricity per million gallons of water.



Reverse-osmosis equipment inside the desalination plant in Miami-Dade County. As sea levels rise, the county will have to get more of its drinking water from brackish sources.

PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

Though far from perfect, desalination may one day be Miami's only option. Climate advocates fret that the increased need for desalination will accelerate global warming. For the county, there's a more urgent concern: Reverse osmosis is enormously expensive. Water from the plant, built by engineering company AECOM for \$55 million, costs two and a half times as much to process as water from the Biscayne Aquifer.

Hypothetically, most of the challenges climate change poses to Miami's drinking water could be solved with money. Homes with septic tanks could be connected to the sewer infrastructure, a process Yoder estimates would cost from \$2 billion to \$3 billion. The soil at Superfund and other industrial sites could be dug out or better encased. Real-time monitors could be installed to warn of unexpected seepage. Still more advanced technology could be installed at water-treatment plants. But those projects would need funding. And there's already a long line.

In 2008 the Florida legislature passed a law dictating that the State's water utilities stop discharging sewage into the ocean by 2025; complying with that timeline could cost as much as \$5 billion, Yoder says. Then, in 2013, Miami-Dade entered into an agreement with the EPA, which had found the county unlawfully discharged more than 28 million gallons of untreated wastewater into Biscayne Bay. The county promised to upgrade its wastewater collection and treatment facilities at a cost of \$1.6 billion.

In its latest capital budget, Yoder's department estimated that \$13.5 billion would be required for these and other future infrastructure projects, of which \$9.5 billion would be funded by bonds. But last November, Moody's Corp. warned that the county's creditworthiness depends on "future annual rate increases to meet escalating debt service requirements"—saying, in effect, that the county's elected officials who must approve rate increases had better be willing to accept the political pain associated with ratcheting up their voters' water bills. If not, the county's credit rating could fall, necessitating higher interest payments on its bonds—and even higher water bills to cover them.

The county's crush of climate-related spending requirements goes beyond protecting drinking water. Add to that the cost of pumps and sea walls as rising seas turn the area's gravity-reliant drainage canals back on themselves. "Anything that this county relies on that is gravity-based is in jeopardy with sea-level rise," says Wilbur Mayorga, head of environmental monitoring and restoration at the county's Department of Environmental Resources Management. "We've been lucky all this time. The time will come that it may not be so easy."

Spending on that scale is hard for any county to manage on its own. The challenge is greater here: Despite pockets of extreme wealth—one study estimated that the Miami metro area has the nation's eighth-highest number of millionaires—the county overall is poor. Its median household income of \$44,224 is almost one-quarter lower than that of the country as a whole.



New construction in Miami-Dade County.

PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

Asked if the State would help Miami-Dade protect its drinking water from climate change, Governor Rick Scott's office directed questions to the Florida Department of Environmental Protection, which said in a statement that it "continues to work to protect the resiliency of our coastal ecosystems and shoreline communities." But José Javier Rodríguez, a Democrat who represents Miami in Florida's Republican-held senate, says his city is unlikely to get bailed out by the State. It's not a question of believing in science. "The massive political and institutional resistance to taking action, in my view, is not largely ideological," he says. "It's not largely even political. It's a question of being intimidated by the price tag." As the low-tax State struggles against a revolt among school districts protesting meager budget increases and a \$28 million prison funding deficit, there's no appetite for funding the solutions to future crises, even when the future is almost here.

The obvious solutions would cause problems of their own. Why not stop mining near the wellfields, for instance? Because the limestone from those mines goes into the concrete used to construct sea walls and build higher off the ground around Florida's coast. There's little disagreement about the need to get rid of the septic tanks, but which homes get help first? If a coastal neighborhood will have to be abandoned anyway, is it worth spending money on new sewers?



Rock lakes. The county rests on the Biscayne Aquifer, which is so shallow the water seeps up through the ground.

PHOTOGRAPHER: ANASTASIA SAMOYLOVA FOR BLOOMBERG BUSINESSWEEK

Now pull the lens back further. Miami's drinking water problems are merely one facet of the still-accumulating effects of climate change that officials must identify, decipher, and combat. These include new diseases such as Zika, more frequent toxic algae blooms, disappearing beaches, heat waves, the growing threat of a real estate crash, and the eventual need to relocate people away from the coast. Protecting the aquifer isn't the end of adapting to climate change; it may not even be the hardest part. It's simply the price the city will have to pay to keep trying.

That leaves the cruellest lesson of climate adaptation: The costs of saving Miami will mostly fall on the people who live here—testing how much they're willing to pay for the privilege, a sort of free-market Darwinism for the life of whole cities. "There will always be drinking water here," says Virginia Walsh, a hydrogeologist with Yoder's department. "It's just a question of how much you want to pay for it."

Stoddard, the South Miami mayor, says the people who already have homes here will accept almost any price to stay. But those who would otherwise come to South Florida will start looking at the growing cost of protecting it—measured in water rates, in property taxes, in insurance premiums, in uncertain future home sales—and go elsewhere.

"People will hang on with their fingernails to keep what they've got," Stoddard says. "But who's going to move here? And that's what's going to kill us."

Ms. MUCARSEL-POWELL. Thank you.

I would like to now recognize Mr. Graves for 5 minutes.

Mr. GRAVES OF LOUISIANA. Thank you, Madam Chair.

I want to thank all of the witnesses for being here today and appreciate your testimony.

Mayor, first, it really is impressive to see some of the cost savings and some of the forward-leaning efforts that you took in working together with EPA on integrated planning, and so first I want to commend you. I want to commend you for the cost savings. I want to commend you for thinking forward and working through

a voluntary relationship with EPA on the integrated planning approach that has apparently yielded good outcomes for your community. And I have family there so that is important.

But I am curious. As you may know, we did enact integrated planning law last year, and I believe you may have some thoughts about what we got right and maybe what we have left out and can improve on in a second generation bill.

Do you care to share any perspective on that?

Mr. CONDON. Absolutely. Like I shared in my opening comments, integrated planning was literally just a thought, and we acted on a memo. I still have the memo that came at the time from Nancy Stoner.

And so as you look at the integrated planning and the way it was passed, thank you for doing that. We are very happy at the U.S. Conference of Mayors that that became law.

There are a couple of pieces as we look at integrated planning going forward, and that is especially across this country, in order to meet the regulatory requirements, EPA has, I believe, five different ways that you can meet those standards, and one is a variance.

Believe it or not, that is not universally done across the United States. The State of Washington, in my understanding, has never done a variance to meet a, in my opinion, unreasonable requirement of, in this case, seven parts per quadrillion of PCBs. We cannot even measure that.

And so as we look at this in integrated planning, you really need to go back and look at the regulatory framework after those plans are accepted. If those plans are accepted as the right way to do, and again, this was not without green infrastructure, but that is to be said how does then the regulatory environment meet with the integrated planning.

So I would ask especially this committee in their oversight at the EPA and of the delegated States that it is actually implemented the way it was intended. So I was very excited to hear the chairwoman talk about the oversight role of this committee.

Mr. GRAVES OF LOUISIANA. Great. Thank you. I appreciate it.

And as we move forward, again, I fully expect that through oversight and through perhaps a second generation bill, version 2, we will come back, and so if you do have any additional thoughts, I would appreciate you sharing those with us on how we can further improve our build upon.

Mr. CONDON. Integrated funding would be another key issue.

Mr. GRAVES OF LOUISIANA. Great. Thank you, Mayor.

Mr. Kricun, again, I want to commend you for some of the efforts that you have undertaken. It appears some of the cost savings you have provided under some of the work that you have done has been impressive.

Could you talk a little bit about how replicable you think that is? Because, as you have heard from the panel, there are sort of mixed messages about whether this is a funding issue, an implementation issue, and I am just curious of your perspective on how replicable it is and how we could do a better job from here helping to empower other communities to achieve some of the low rates that you have been able to achieve.

Mr. KRICUN. Thank you, Congressman.

I think in a way our county is sort of a microcosm of the whole country in that we have this very economically distressed community with an average median income of only \$26,000, and yet we have some affluent communities as well.

So I believe that it is completely replicable for any utility if the State Revolving Fund is there. Without the State Revolving Fund, we could not have done it. We would have had to have raised rates, and we would have been forced to raise rates on our economically distressed community. So that would have been a real problem.

But because of the State Revolving Fund and because of internal efficiencies, we were able to upgrade our infrastructure as it needed to be, but also hold the rate. I definitely believe it is replicable.

I think though for some utilities or municipalities which lack resources, you know, whether it be economically stressed communities, cities, rural areas, I think that is where our peer-to-peer efforts, especially from the State Revolving Fund, may be getting circuit riders getting out there to help them with the State Revolving Fund because what I found in Camden was that they lacked resources to apply for the funding, and then when the funding was available, they had to get much higher interest rates when they could afford it because they did not have the funding to go through the SRF program.

So one thing I would really recommend is support for economically distressed communities, small or rural or urban areas that do not have the internal capacity to apply for these fundings.

There are two things. One, making the funding available. Continue to make it, expand it as much as possible. It is a loan that has to be paid back, but then also provide some assistance for those that need it to apply for it and go through the program.

Mr. GRAVES OF LOUISIANA. All right. Thank you. I am out of time.

Ms. Taylor, I wanted to ask you a question. All I could think about when I heard you talking about the money issue, that quote that people who say money cannot buy you happiness do not know where to shop.

But I do have some followup questions with you, and we will submit those in writing if you do not mind responding.

Thank you. I yield back.

Mrs. NAPOLITANO [presiding]. Thank you, sir, for your testimony.

Mr. Delgado, you are recognized.

Mr. DELGADO. Thank you, Chairwoman.

I want to thank the panel and, of course, especially thank Mr. Mokszycki for making the trip from upstate to tell the folks here in DC about the needs of rural communities.

Eleven counties, that is how many counties are in New York 19. I represent the third most rural district of any Democrat in this body, the Eighth, both Republicans and Democrats.

As you have articulated, Greenport is one of the many communities in New York 19 where residents are not only struggling to pay their water bills due to increasing rates, but also have seen an increase in property taxes to pay for vital infrastructure projects.

It is for this reason that I am glad to support the WATER Act, which creates a water trust fund to be used by the Clean and

Drinking Water State Revolving Fund loan funds. Legislation would also create new grant programs to help rural communities improve their water and sewer systems.

Now, you have talked about technical assistance for small and rural communities and how important it is to help with complying with the Clean Water Act and assessing the State's revolving funds.

Can you explain how this works specifically? And how has Greenport, and I know you talked about this earlier, this \$85,000 grant, has benefitted from technical assistance?

Mr. MOKSZYCKI. OK. Thank you.

Yes, we work with Rural Water quite a bit. They have helped us with our Clean Water Revolving Fund loans. They have helped us with contacts with people. They have helped guide us on how to pursue this.

We are a small rural community. We do not have anyone on staff who does this. We either have to hire an engineer or we have to go to someone like Rural Water to help guide us through it, and we have a lot of the same problems that the large communities do where you do have to go to a number of different funding sources and see if you can get funding in order to be able to do your projects.

And, you know, without the money from the revolving loan fund, we could not do a lot of these projects. We just simply could not afford them. With the American Recovery and Reinvestment Act money that we received for our wastewater plant, we were under a consent order. We were looking at a \$9½ million bill.

If we had self-financed it, we would have spent \$17 million over the 30 years of the loan. We were fortunate. We are going to end up spending roughly around \$4 million for that same plant, which made it something that our community was able to afford. We would not have been able to afford it without that help.

We were very fortunate to get a zero-interest loan. We were extremely fortunate to get half loan forgiveness. That also allowed us to turn around and do another water project afterwards that badly needed to be done. We had 50 water breaks a year. That work needed to be done. There is no way we would have been able to do both. It just would have been impossible for our community. We cannot afford it.

We still have a lot of work left to do. We need to upgrade our pump system. We need to upgrade our transmission system. There is a lot of money still left on the table, and hopefully with the SRF money, we will be able to do that.

We have been raising rates. We have been trying to keep them from getting too extreme because our residents just cannot afford it. We have a lot of seniors. We used to have a lot of industry in our area.

Mr. DELGADO. Yes.

Mr. MOKSZYCKI. And that is basically what paid for most of the infrastructure to go in in the first place, but most of that is gone now.

Mr. DELGADO. Right.

Mr. MOKSZYCKI. And the businesses that we do have are not the type that really participate in the community in the same way that

the industry and the factories that were there before used to participate. It is a lot of retail, a lot of small stores, but they do not have the kind of resources and funds to support the infrastructure like some of the larger businesses that we had in the past did.

Mr. DELGADO. Yes, and I appreciate all of that and the followup. To piggyback on a comment or a question from one of my colleagues earlier on the distinction between public and private action and the role that some might believe private actors are better suited for in terms of addressing these scenarios.

And I have often found that absent a population center, a dense population center that can function as a basis for achieving profit in some way, shape, or form, rural communities are marginalized as a result because private actors do not have the incentive to invest in these communities.

And one would, therefore, hope that in promoting the general welfare and promoting the public good, as is our responsibility as detailed in the Constitution, that the Government would at that point deem it appropriate to leave no one behind.

Would you agree with that?

Mr. MOKSZYCKI. I would agree with that.

Mr. DELGADO. Thank you.

Mrs. NAPOLITANO. Thank you for your testimony, sir.

Mr. PALMER, you are recognized.

Mr. PALMER. Thank you, Madam Chairwoman.

Mayor Condon, a lot of States and localities are using life-cycle cost analysis to determine the appropriate materials for a particular project. Given the limited resources particularly of municipalities, would more frequent use of a life-cycle analysis help these funds go farther?

Mr. CONDON. Yes, definitely, and that is the approach we took as we went to integration across our city. Like I spoke earlier, in my graphic number 2 there, we now look at our streets as part of the life-cycle cost, i.e., we used to go in and look at, and especially since they were all stove piped just like most governments, stormwater, wastewater, and water all had different motivations. Now they want to retain less stormwater in some cases, in some sections of our streets that we want to redo, saved nearly \$1 million from treatment by redesigning the streets to take into account stormwater collection.

What I always say is old is new again. We used to have parking strips. We got rid of those in the 1970s and 1980s. We are now back to those. We call them swales, but at the end of the day, especially in my part of the country, that is where the snow goes and that is where the stormwater goes. So definitely life cycle is key.

Mr. PALMER. You said something in your testimony that caught my attention. This is an issue that has been brought up in other committees that I have served on, and that is the regulatory standards that are being imposed, sometimes the technology does not exist to achieve those.

And plus, even if you do a life-cycle analysis and you get what you think is more than adequate, the standards change so rapidly that even before you fully paid for what you just did, you are having to do it over.

Mr. CONDON. That is exactly our request for a variance, and my citizens are paying \$200 million in green bonds for the next 17 years. That was a 20-year bond cycle, which is quite conservative in this country, as we are going to 30-, 40-, 50-year bonds, but our citizens should, as they mortgage this green infrastructure, have the benefit at least on that contaminant.

And if I could finish, most of our regulatory environment is on quantity not quality. If we were truly to look at the quality of our river, our citizens, very environmentally minded, would use their resources for other contaminants rather than going after the first one on the list that we have done a major investment on, but now the standard had moved on us in the middle from start of integrated planning to the end of integrated planning when I'm supposed to sign a permit before the end of the year.

Now they're saying it went from 170 parts per quadrillion now down to 7. So what am I supposed to do as we finish one of the most innovative projects in the country and now the regulation shifted on me?

Mr. PALMER. Well, what they have done is they have created regulations, and they say that it is black box technology. Well, there is nothing in the box, and it is putting an enormous burden on cities.

I grew up in rural northwest Alabama, and it has potential to bankrupt cities. Mr. Mokszycki, you mentioned the consent order that you are under. I represent most of Jefferson County, and that was the largest municipal bankruptcy in the history of the country until Detroit, and that began with a consent decree dealing with our storm sewers.

I know that is not the subject of this hearing, but I have done a tremendous amount of work on this about creating a database transparency, and I am proud to say that every Democrat, all of my Democratic colleagues voted for this, to bring transparency to this issue so that when someone gets elected mayor or Governor or city council, they know what they are under and have an opportunity to have some kind of mitigation for that.

You did not elaborate on it, but what you are really saying is that you have lost control of the ability to correct the situation because it is under the control of a Federal judge or a control group or a special master.

Mr. MOKSZYCKI. Well, yes, you have a plan for how you want to proceed with your problems, and suddenly all of the money gets shifted to a separate problem because of the consent order. It is work that needs to be done, but it also impacts all of the rest of the infrastructure that you have to take care of.

You know, in the small rural communities, we do not have a lot of resources to help us. It is usually just a few guys, and you know, you are not only dealing with wastewater and water. You are dealing with stormwater. You are dealing with parks. You are dealing with streets. You are dealing with everything together, and when you get a consent order and so much money and focus has to go to that consent order, all of the other utilities suffer for it.

And unfortunately, we do not have the resources to combine everything and do everything at once, and we do not have the people to go out and look for these grants, look for these loans, and pursue

that. We need to get help from outside in order to be able to do that.

Mr. PALMER. Well, I thank the witnesses for their attendance today, and I yield back.

Mrs. NAPOLITANO. Thank you very much, sir.

Mrs. CRAIG, you are recognized.

Mrs. CRAIG. Thank you so much, Madam Chairwoman.

As you know, each of you, nonpoint source water pollution is a big problem across the country. It comes from multiple sources, and unlike point source pollution, that can be traced back to industrial and sewage treatment plants.

Under EPA's 319 program, States receive grants to help develop and administer their own programs to address nonpoint source pollution. As each of you may know, I have worked with my Republican colleague, Representative Brian Mast of Florida, and we have introduced a bill that would reauthorize this program for the first time since it was established.

So I would like to start with perhaps Mr. Kricun and perhaps Professor Heaps and ask you: How important is it for Congress to continue to reauthorize and appropriate funds for this program?

And tell me how it can address these nonpoint sources of pollution.

Mr. KRICUN. Thank you, Congresswoman.

Yes, I mean, it is incredibly important, and thank you to you and to your Republican colleague and others who are supporting this bill.

The 319(h) grant program is a very important funding program. We have been talking about the Clean Water and Drinking Water State Revolving Fund. That really is helpful, but 319(h) is a program that offers assistance for things that are not eligible for the State Revolving Fund program.

So we have been using 319(h) funding in Camden County for a lot of that green infrastructure, some of it that did not have a combined sewer nexus, like building bioswales along riverfronts, brownfield cleanups, et cetera, things that were not related to our sewer system itself.

So it is a great supplement and assistance for even in an urban area, but especially in rural areas. So I really support it and hope that it goes forward.

Thank you very much.

Mrs. CRAIG. Thank you.

Ms. HEAPS. Thank you.

Yes, I would like to echo what Mr. Kricun said. In the Chesapeake Bay watershed, there has been a phenomenal cooperation between Federal, State, local governments to try to clean up the Chesapeake Bay, but stormwater is the one area of pollution that continues to grow, and 319 grants are critical to address those.

In rural Vermont, agricultural pollution is a problem, and 319 grants are used to help farmers put in important conservation practices to reduce their runoff pollution as well.

Mrs. CRAIG. Thank you so much.

Ms. Flowers, I just want to start this next question to you, but I want to first say thank you for your work with EJI. I had the opportunity to visit your State and your city here this past week-

end with Congressman John Lewis and walk across the Edmund Pettus Bridge with him in Selma.

So it was stunning, frankly. I come from a suburban, half suburban, half rural district in Minnesota where we have been investing in certain things, and to see the inequities and disparities in your community, every American should see that, and I think it would make such an incredible difference.

So, Ms. Flowers, in your testimony you noted that the U.S. census once captured information regarding whether homeowners were served by municipal treatment or septic systems, but the question was taken off after the 1990 census.

Can you speak a little more to what kind of data that collection would be useful to properly assess the wastewater infrastructure needs in the country?

Ms. FLOWERS. Well, thank you for asking that question, and thank you for coming to the area this weekend.

That information, we cannot solve the problem without understanding and quantifying what the problem is. Actually one of the observations that I have made since I have been working in rural communities is that after the census stopped going from door to door, I think a lot of rural communities were left out.

You cannot do a qualitative analysis of people in rural communities by just looking at addresses. For an example, in Lowndes County, there may be one address and five homes there. But that is not going to be counted.

And whenever funds are distributed or they design projects, they look at that kind of data, and I think in that data there are gaps in rural communities.

We have what we call a rural lexicon, and what the rural lexicon means is that a lot of the policies are written in such a way that it excludes rural communities. For example, it says it is a municipality of so many people. That automatically excludes a whole lot of rural communities.

So we think that in terms of the census, the data that could be collected by finding out how many people are on rural wastewater systems or septic systems will help us work on the solution a lot better because I think right now when people look at it, because we are in the news, they think if they solve the problem in Lowndes County, Alabama, it solves it in America. That is not true.

Mrs. CRAIG. Thank you so much.

And I yield the balance of my time, Madam Chairwoman.

Mrs. NAPOLITANO. Thank you, Mrs. Craig.

And I will yield to my cochair for the rest of the questioning.

Mr. WESTERMAN. Thank you, Madam Chair.

And I recognize the gentleman from California, Mr. LaMalfa, for 5 minutes.

Mr. LAMALFA. Thank you both.

My part of northern California is the area that includes what is known as the Camp Fire in what was Paradise, California, as well as many other fires. We had the Car Fire in Redding, California, as well.

The damages that are being attributed to the Camp Fire are being estimated at \$16.5 billion at this point, which would be the largest disaster anywhere in 2018 in terms of cost.

Nineteen thousand structures, fourteen thousand of them being homes, residents trying to determine if they are going to come back to the area. There is a good cleanup phase going on right now, and things are going reasonably well in that regard, but the intention is to rebuild the town, and where many of us are committed to seeing that it is done.

But we need an improvement in the process there. It is one of the largest towns anywhere that was nearly entirely on a septic system, and we know what kind of problems there are with compliance and all that, and so it needs to come back with a good sewer system on that, especially for the main spine area of the town and branching out where it is practical.

So the Clean Water State Revolving Fund and other wastewater grants all require a local match. So I guess my question, and I will ask Mr. Condon and Mr. Mokszycki what they think about this; the local match for a place where basically not very many people live right now. The population of about 30,000 is decimated. You may have a few hundred living in the town, and it will take a while to rebuild that.

But should we rebuild the same old infrastructure? Should we improve at this time when you have unfortunately, but indeed, I guess there is opportunity, to rebuild with better infrastructure?

They are talking new underground on the power lines, but indeed, coming back with a sewer system, you have got it torn up. You might as well do it right.

Outside of asking FEMA for additional money, what can be done for a community that has been devastated like this, since they do not presently have the tax base to do so right now?

So you two gentlemen, please.

Mr. CONDON. Well, I will start.

Of course, we are a larger city, but of course, we are in the middle of rural America in eastern Washington, northern Idaho area, and it is becoming more and more this way, that the Federal and State government requires the matching funds, which is very difficult.

I alluded earlier. I come from the Fifth Congressional District, represented by Congresswoman McMorris Rodgers, but formerly by Speaker Foley, and at that time, there was \$100 million, \$5 million a year to eliminate our septic tanks in the region because we are on a single source aquifer. That was the grant.

So that went over a 20-year period. We had an innovative program in the region to deal with that. So as you look at these programs, it really gets back to, especially for the smaller communities, grants, low interest loans. But as soon as you start putting in the match requirement, it becomes much more difficult, to say the least, especially since there are multiple sources that we usually have to go after to get these dollars.

So where does the match count? And whose match counts where? And what percentage of that match? And it becomes even a more bureaucratic Rubik's Cube to put these funding sources together. So it becomes even more difficult for the smaller communities, definitely.

So the more you can simplify it, the more you can look at a single source for integrated projects, someone, you know, as they go to re-

build an entire town, where are the dollars that come from many different sources, but you only have to apply to a single grant account at the Federal level or at the State level rather than making these communities go across multiple different funding sources?

Thank you.

Mr. MOKSZYCKI. Thank you.

Yes, I agree. The other thing is that, you know, obviously your situation is a particularly difficult situation, and there needs to be something in the program that allows for these difficult situations.

It makes sense to do these projects now. It will be much more cost effective to do it now, and you know, the money should be set aside so that it does help the people that are most in need, and I would think that this situation should be something that should qualify for it.

Mr. LAMALFA. Yes. I am sure if, you know, the population was there, they would be willing to have that discussion on how to come up with a match. But we need something unique in this and other disaster situations.

So what kind of regulatory changes can we make to reduce the cost of delivering these systems, since the projected need over the coming next 20 years is almost triple what has been invested in the last 50 years?

So would you touch on that please, Mr. Mokszycki?

Mr. MOKSZYCKI. Well, I think one of the biggest things as far as regulatory is to, you know, rather than having the entities try to use enforcement to force people to do upgrades without having any sort of financing to back that up or some help for the local communities to do it, to try to use the best technologies out there and try to fund that and make improvements, not necessarily just solve the problem, but try to solve the problem long term.

We want to try to make permanent solutions, not just get out from underneath an enforcement.

Mr. LAMALFA. Right.

Mr. MOKSZYCKI. We want something that is going to last, something that is going to be long term, something that we do not have to come back and redo.

So funding needs to be adequate to allow communities to be able to fix their problem and put something in that is going to last.

Mr. LAMALFA. Modernize it, but at the same time we have to be cost effective in doing that and hope there are less roadblocks and unneeded costs and hurdles.

So I had better yield back. Thank you.

And thank you, Mr. Chair.

Mr. WESTERMAN [presiding]. The Chair now recognizes the gentleman from California, Mr. Lowenthal, for 5 minutes.

Dr. LOWENTHAL. Thank you.

I had two sets of questions. One has to do with the NPDES permitting process, and the other one about what I believe is the critical need to capitalize the State Revolving Fund, and I am going to ask about that.

But the first one is about a year ago, maybe a little less, after a hearing in this subcommittee, Congressman Garamendi and myself wrote a letter to the committee saying that we wanted to follow up that hearing on the need to modernize the National Pollutant

Discharge Elimination System permitting process, the NPDES permitting process, by allowing States who have a delegated authority to administer the permitting process to issue permits for up to 10 years rather than just 5 years.

And it gets to what Mr. Woodall said. It would not be mandatory. We do not request mandatory moving it up, but that we reward good actors really and those that are trying to comply by actually allowing them to do the work that they need to do.

So I am wondering, first from the mayor, Mayor Condon, and also, I think, Mr. Kricun, what is your experience? How important? Is this a good step?

Should this committee really be working on something like that, setting in legislation so that those actors who are good actors have an opportunity to extend it?

And how important is that to extend it?

So I ask you.

Mr. CONDON. In two words, very important. To give certainty to our ratepayers, to give certainty to local governments to implement these regulations, I use the example in our case where we have prudently bonded some \$200 million of a \$350 million project. There are 17 years left in that payment.

For that regulation, now, mind it: one of only hundreds if not thousands of regulations on this issue. We should be granted a variance to the best science that was available, the best equipment that is available; that that downpayment by my community has been made.

And so how do we then go through the permit process to give that security to our citizens?

Technology is phenomenal, and we spend inordinate amounts of money getting to the best technology. The good actors should be rewarded with that. And so the movement to 10 years would be phenomenal, or the technology or the investment that would have been made.

I would further that with and encourage this committee in your oversight that it is universally applied across the country, especially in delegated States. My State has never had a variance based on the regulations created both here in Congress and then also those that are at the agency level.

I cannot say this enough: that the good actors get rewarded even in the case where there are delegated States. And although I believe in the States' rights and that ability, but also a real reality of what is happening across this country.

Mr. KRICUN. Thank you, Congressman.

First of all, I applaud you and your colleagues for the thoughtful way of looking at this NPDES permit situation.

To me, I think that the length of the permit cycle is not as critical as the ability to be able to modify the permit should technology or external conditions change. If there is less rigidity, then the permit duration does not really matter.

My concern, as an environmentalist as well as a water utility manager, is that good actors and bad actors are sometimes determined by the leadership, and so a utility is not monolithic. So you might have a good actor, but then the leadership might change,

and it may not be a good actor. And so you have to be careful about that.

But I think there needs to be flexibility within the permitting system. For example, blending is a really good example of that. If our permit was more flexible, we could actually take more stormwater flow at our treatment plant and reduce combined sewage flooding and overflows if we were allowed to mix the flow in in a different way.

It is more of a permanent rigidity, which is hard to explain in a short time, but the point is I think greater flexibility is the thing that really good actors need, and that would be my recommendation, sir.

Dr. LOWENTHAL. Yes. And just quickly, Mr. Kricun, you know, in your testimony earlier, I think, how the SRF loans allowed your agency to keep water rates down, can you expand? How does it affect affordability?

I know in Orange County, we have used it a tremendous amount. It has been extremely successful in our groundwater replenishment system.

But tell me how does it? I know it needs to be briefly, just a few seconds.

Mr. KRICUN. Basically the State Revolving Fund allows us to upgrade the equipment in a way. So the new equipment has lower maintenance cost, lower energy cost because it is newer. So the operations and maintenance savings are greater than the annual debt service cost because of the low interest rates.

That is how we are able to upgrade the performance, protect the environment and the public health, and hold the rates down.

Dr. LOWENTHAL. Thank you.

And I yield back.

Mr. WESTERMAN. The Chair now recognizes the gentlewoman from Puerto Rico, Miss González-Colón.

Miss GONZÁLEZ-COLÓN. Thank you.

And thank you for the opportunity, all of the members of the panel.

And I think I will go in the same line Mr. LaMalfa, my friend from California, just made because of the disasters in California, and I thank you for taking the opportunity to explain what happened with Hurricane Sandy.

And we in Puerto Rico, and I am the only representative for the 3.2 million American citizens living there, and one thing is before the hurricane and another one after the hurricane.

In our case, we are dealing with different situations as well. We do have an Oversight Board on the island that limits and actually just capped to 50 percent the capital investments in infrastructure for the next 6 years, and when we identify and the Government of Puerto Rico identifies more than \$769 million needed just to repair the water infrastructure on the island, and now that it is just capped to \$13 million every year for 6 years, we will never recover from that.

So we have got different experiences that I want to ask for your advice here. One thing is the money that we receive from FEMA in order to repair a lot of these water systems. The other one is that we are also under the pressure of restructuring the debt of the

island, and that limits our opportunities to actually access a lot of the funds and matching the requirements for the communities.

We have got more than 170 community separate water systems that attends more than 89,000 people on the island as well.

The main issue right now that as, Mr. LaMalfa was talking about, we may have been OKed the money by a discount resident to fix a lot of the failures or infrastructure damage by the hurricane. And actually this committee recommended to pass an amendment that I was pushing for that the staff wrote in order to build back better, not the way it was before.

But right now, we have gotten a memo from FEMA saying that that will cost more money immediately, and that will just fix what was there before the hurricane, and that was not the intention of the law.

So my question for the panel here, and the mayor as well, is: How do we find a balance to build back better, because the community needs it, in terms of the access to not just drinking water?

Actually we are in a drought right now. So there are water restrictions in Puerto Rico in some areas as we speak today because there is a lot of investment that needs to be done, and we just paid our debt with the revolving systems just February 20th.

So we are showing the real need of getting more access to that money. How do we make changes? How can this Congress directly make changes in order for communities to match that 20 percent, connecting the FEMA when disasters are happening, even by another law of Congress in our case, the Oversight Board, to make that infrastructure better?

I think the whole point of this hearing is how we can get better infrastructure in water services, clean water and wastewater as well.

So any recommendations would be highly appreciated.

Mr. KRICUN. Well, thank you, Congresswoman.

I have spoken with Pete Lopez, the EPA Regional Administrator. New Jersey and Puerto Rico are in the same region, along with New York.

And our wastewater treatment plant is almost exactly the same size as PRASA's largest treatment plant. So he asked me to speak with PRASA because what we are doing to get off the grid and develop a microgrid for Camden City's most vulnerable facilities, like hospitals' drinking water plant, fire, police, schools, the jail, et cetera, could be replicated in Puerto Rico. In fact, I think it could be done more effectively because of the water-energy nexus is an even greater opportunity in Puerto Rico because of your high energy costs.

So I have been talking with PRASA, and I would be glad to speak with you afterwards, but I think there is a tremendous opportunity to do a project that would take your water, your sewage and sludge, and turn it into energy, underground, resilient energy, which then could be used to protect the island against power outages from storms like last summer.

I think there is a tremendous opportunity there. Also, food waste conversion into energy, and it is definitely affordable, and the energy savings would pay for the facility costs. I have already looked at it.

Miss GONZÁLEZ-COLÓN. I know I am running out of time, but if we can amend or even have reading recommendations, I will be more than welcome to have it.

And we never talk here about generators. Six months after the hurricane we were drinking water because we use generators in our power plants, and we still do it in some areas.

So thank you, and I yield back.

Mrs. NAPOLITANO [presiding]. Reclaiming my time, thank you, Mr. Westerman.

He has to depart.

Mr. WESTERMAN. Thank you, Madam Chairwoman.

Mrs. NAPOLITANO. Mr. Carbajal is on.

Mr. CARBAJAL. Thank you, Madam Chair.

And thank you to all of you for being here and sharing your testimony with us.

Mr. KRICUN, thank you for your willingness to advocate in support of much needed water and wastewater infrastructure resources for local government.

I served in local government for many years. So I really appreciate you more than ever today.

In your testimony, you mentioned Hurricane Sandy in New Jersey and hurricanes in Houston, Florida, and Puerto Rico. You used these examples as evidence of how ill-equipped our existing water infrastructure is to deal with these extreme events and climate change.

I represent the central coast of California. Last winter, our region experienced a devastating wildfire season followed by a very, very heavy rainfall event, which triggered a deadly debris flow that claimed the lives of 23 of my constituents and ruptured the main water line on Montecito.

This left many of my community stranded and without access to clean drinking water for days. Based on your experience in local government, what are the pros and cons of creating a dedicated Federal program to help communities strengthen the resiliency of the water and wastewater infrastructure against these threats, one?

And, two, what are the challenges that local governments experience in trying to fund some of these water resiliency projects?

Mr. KRICUN. Thank you, Congressman.

For the first question, it is an absolute must. I mean, we have already seen, and I know there is a difference of opinion between whether climate change is real or not. Put that aside. Climate history has shown that our infrastructure as it is now is wholly inadequate for how the climate is now.

So we must build resiliency, and then there is a quite a bit in the body of science that shows that the climate will only worsen and that problem will only be exacerbated. So I think it is critical to have resiliency funding for vulnerable communities, both in arid communities or in areas where there is too much water.

And I could not support that more and hope that the Congress will support that.

In the meantime, we must look for opportunities. If you are in an area where there is too much water, like in the East where we have flooding issues, or in Puerto Rico or Florida, Houston, we

need to upgrade our infrastructure. We need to expand it. We need to build for rising river level issues.

Green infrastructure is very important, and that should be funded. Our State does fund it, but not all States do. They fund it through the SRF.

To soak up the stormwater in arid States, you know, there are measures that need to be taken as well. I mean, I think that we are doing the future of our country and our children and grandchildren a disservice if we do not plan for this now and try to fund to protect, you know, the vulnerable communities in our country.

Mr. CARBAJAL. Thank you so much.

I yield back.

Mrs. NAPOLITANO. Thank you, Mr. Carbajal.

Seeing as there are no other questions from the Members of Congress, we will go to a second round if you do not mind. This is a very important issue, and we want to give it as much light as we can.

So I will start with a question for Mayor Condon.

One of the things that you mentioned was the integration of your streets to collect more water. Would you mind elaborating on that?

I think that is an important thing for us to know, and some of my cities are doing it, but I would like to know more about it.

Mr. CONDON. Thank you very much, Madam Chair.

Yes, several years ago we took this integrated idea and took it throughout our city. We now look at our streets as three dimensional, as what is important underneath is just as important as what is on top, and we functionally went through the process of handing our Streets Department from the operational government over to the utilities side of our operation, meaning that those same engineers that design our water, sewer, stormwater system now design our streets.

We used to have that all done separately. Not only that, but you can think of it, and those of us in local government, we get notified when they see a brandnew street. A year or two later the Utility Division is out there cutting it open to put in new water mains or new sewer mains.

It took us 3 years in transition, but now a lot of our street redoes are done based off of what the infrastructure underneath needs to be done, saving all the money from reconstructing that street after utility; not only that, but now our investor-owned utilities are lining up their capital projects with ours so that they are redoing their capital at the same time.

Mrs. NAPOLITANO. Well, I'm glad to know that because at one point I had asked when I was mayor of a city why the utilities did not inform us when they were going to break the streets up. Guys, we could channel all of that energy and save money and do it right.

But now that it is happening, maybe more people will take notice of that.

Thank you very much for the answer.

Mr. Mokszycki, the Clean Water Act once authorized grants for water infrastructure, but switched primarily to loans through the Clean Water SRF. You suggested our SRFs should be allowed to use grants in the form of loan forgiveness and zero interest.

I agree with that. Can you expand upon the point?

Mr. MOKSZYCKI. Well, yes. Well, all I know is that for us, if we did not have the loan forgiveness and the zero-percent interest, we would not have been able to construct a plant that would have completely solved our problem as far as discharging wastewater to the local creeks.

So it is very important, especially for the small rural communities. They just do not have the resources to fund adequately what they need to do in order to solve the problem long term.

What we are looking to do is, you know, we need the zero-interest loans. We need these grants to be in place for the most vulnerable communities. We were fortunate to get that money, and it allowed us to do some of the other work that we needed to do with our water lines.

More to the point, we had the same problem with our Highway Department, and our water and sewer utilities are separate, and there is nothing more disturbing to a highway superintendent than going out and watching us put a nice, big hole in a brandnew paved road because the water lines are so inadequate and they fail so often, but they just could not wait to repave the road and, you know, 1 week later, 2 weeks later, you are out there digging these roads up.

Stuff does need to be coordinated, but we also need to be able to afford it, and without the Clean Water Act funds and without the grants and the zero-interest loans, there is just no way these small communities can afford it.

Mrs. NAPOLITANO. Thank you for your testimony.

Mr. Kricun, you suggested the SRF is a proven successful resource for water utilities to replace and upgrade the infrastructure while keeping the rates affordable. Please expand upon that point.

Mr. KRICUN. Thank you, Congresswoman, Chair.

So we have used the State Revolving Fund since its inception in 1987 and borrowed about over \$1 billion in funding. Much has been paid back; still borrowing more.

We have rebuilt our entire wastewater treatment plant, upgraded Camden City's combined sewer system to the extent that we will be able to eliminate combined sewage flooding, the same kind of flooding Ms. Flowers talked about. We will be able to eliminate that in Camden for up to the 1-inch storm by the end of 2020, plus using that SRF funding to be off the grid and less vulnerable to power outages, all without raising rates.

Our rate was only \$337 in 1996 per household per year. It is \$352 today. So in 23 years, it has only gone up by \$15 per year because of the SRF. So that is proof that the SRF works.

We are paying the loan back, but because of the loans, we were able to upgrade our system without raising rates. And like I said before, Camden City has a median income now of \$26,000. They cannot afford a raise, but yet they deserve clean water and they deserve freedom from sewage in their basements. So that is how the SRF works.

Mrs. NAPOLITANO. Thank you very much.

Mr. Lynch, you are recognized.

Mr. LYNCH. Thank you, Madam Chair. I really appreciate you holding the hearing, and the ranking member. I appreciate your holding this hearing on a very important issue.

And I want to thank the witnesses. You have been very, very helpful in developing our response.

I represent a district in Massachusetts on the Atlantic Coast that stretches from the city of Boston, one of the oldest cities in the United States, down to Quincy and Weymouth, down all the way down the south shore to towns like Cohasset and situated on the Hull that are impacted regularly by climate change.

And there are also some infrastructure issues on their water supplies because of the age of those systems. It is heartening to hear the concern and the commitment to the State Revolving Funds.

We have done quite a bit of work in Massachusetts. We have funded the Deer Island water-sewage treatment facility. Up until that point, since the days of Massachusetts Bay Colony, they were basically flushing their wastewater out into Boston Harbor, and so that has dramatically changed.

Now, a couple of years ago at Easter sunrise service at Castle Island in South Boston, it is a beautiful area overlooking the harbor, and if there were not 900 people there, no one would believe it, but we actually saw a small school of harbor dolphin going just offshore, and that is the clearest sign that we have ever seen. Never in my lifetime has that been the case.

But it shows you how clean that water is getting because of the investment. It largely has been a State and local and a municipal investment though, and so we have got some of the highest water rates in the country, you know. Maybe because we have been doing the wrong thing for so long.

But the investment on the Federal side is so important to us, and you know, that has been reflected in all of your testimonies. Ms. Taylor, you hit the nail on the head. You know, if we invest in this, do it the right way, and we have got ratepayers out there.

You know, some aspects of our Committee on Transportation and Infrastructure, because of the public mission, they will never make money, but this can pay for itself. If we just get some help, just some very, very low-interest funding, you know, bonding, you know, we can pay this over time.

But we are dreadfully behind schedule on some of these improvements, and you know, Congress has to take note of this. We cannot leave this for the next generation. This is something that has happened on our watch.

And I really appreciate the mayor of Spokane coming here because you are dealing with it, you know, right at ground zero, and it is real to our mayors, and that is who I am hearing from.

I have meetings with the EPA and others with my mayors to try to resolve this city by city and town by town. So we could surely use your help.

Madam Chair, I am glad that you have been such a champion on this as well, and I know that your passion is shared by Chairman DeFazio. And I think we are at a good place, Republican and Democrat on this committee and in Congress, about the importance of providing that support for our water systems and critical infrastructure.

So I am very happy to hear your perspectives. I think it is very important that you came here today and shared those visions with us.

And I yield back the balance of my time. Thank you.

Mrs. NAPOLITANO. Thank you, Congressman Lynch.

Miss González-Colón.

Miss GONZÁLEZ-COLÓN. Thank you, Madam Chair.

I will go back to the question I was doing before, and I know we never got enough time to answer. So, Mayor Condon, can you talk about what other measures can be taken in order to reveal not the way it was before, but in a better way?

And I will combine that question. I was looking into your ALICE form, and I would like to know how do you deal with people that are under the poverty level line. Because in Puerto Rico, the household median income annually is \$19,000.

So our public deliveries rose to 43 percent, which is higher than even Mississippi. So how do you manage that and how do you apply using lower income from communities as well?

Mr. CONDON. Quickly, I wrote down your Build Back Better. I like that alliteration.

So first of all, ALICE is done across the country, every community, and so it is eye opening when you really see that budget, what it means, and there have been comments about, you know, your base rate use versus your utilization rate, especially on the water side.

I was elected primarily because of water rates going up double digits on the consumption side. I do give some credence to the idea that the base rates if they go to high, people cannot negate that.

I would also suggest though if it is in our case so overtly on the utilization side, imagine who is using more water, those people that cannot afford brandnew, to be honest with you, things like toilets, brandnew appliances that use dramatically less water, and so your families, your senior citizens, your low income inadvertently use more water.

Those growing their own food at their house, some of my areas that voted for me because of that water rate increase, our senior citizens that have large gardens. So they are doing exactly what we want, reducing food deserts, using natural foods.

So when you go to water consumption only rates, it also causes a problem, and so as we go down this path, I would suggest that we look at that. It is a whole picture.

The second is, and I go back to it again, is the idea especially as you build back an entire community, is to look across the Federal agencies and look at opportunities where those dollars can be utilized together, but not necessarily put that burden on the localities to figure out where in Federal Government that they can get dollars, but rather look across the Federal Government and truly authorize an account that is for integrated projects from streets to utilities. This is basic infrastructure.

And done together, our private sector and our public sector will do the right thing. Now we have, Chairwoman, as a mayor, you probably saw this. We have people coming together in city government that said, "You know what? If I had authority over the entire right-of-way, look what I can do."

And my citizens are getting walking paths they never got before. They are getting pervious pavement trails, and that all remove

stormwater from the system rewarding our stormwater utility because it is not coming into the treatment plant.

The previous plan was a total gray solution, spend millions, hundreds of millions on the sewage treatment plant. Now we did not have to spend as much because less in does not need to be then treated.

And so really looking at integrated solutions, but for the Federal Government to reward that with, yes, funding for integrated projects and also permits that allow this sort of innovative thinking.

Miss GONZÁLEZ-COLÓN. When you are using new technology, is there any legal barrier to improvise or improve, if I may say, technology that you use in water systems?

Mr. CONDON. Not that I am aware of. I will ask our experts, and I can submit that for the testimony.

One of the more recent ones we are using now is satellite imagery for leakage, where rather than literally today, there is a truck that goes out in Spokane some 60 square miles of a city, and they listen to the street for water, and that is the current technology.

They have a picture of me listening to the street. It never popped up on social media, but a giant stethoscope because they listen for certain sound waves.

Now the technology we are literally just testing out, one of the first in the country, is using satellite imagery to look at leakages. So phenomenal possibilities in technology.

Miss GONZÁLEZ-COLÓN. Thank you.

I yield back, Madam Chair.

Mrs. NAPOLITANO. Thank you.

One more question I have for Ms. Flowers.

One of the things that we talk about is the pollution of our water, and we have not even scratched the surface on industrial, farm runoff, and drugs/opioids. But essentially, we have got to deal with the first problem we have, which is dealing with delivery of water, clean water, potable water to residents.

What would you ask us to do?

Ms. FLOWERS. Well, I think we just partnered with the Alabama Rivers Alliance, and we partnered because they have found at least on the State level where the big polluters are getting away with polluting the rivers and the streams.

And as I mentioned in my testimony, homeowners were being criminalized for having failing septic systems and no septic systems at all.

So I think one of the ways in which we could deal with that is to try to find a way to fund or get funds to those small areas that do not have access to the finances to put technologies in place to treat wastewater.

In our area, I know everybody has talked about the match that is required. There is no tax base. So, therefore, there is no match, and they will not be able to apply and receive funding.

So there should be something that will allow for those parts of America that have been marginalized for so long to be prioritized where they can have access to these funds as well because to make them available and then people do not have access to it is not going

to clean up our rivers and streams. We are going to still have the same problems that we have right now.

Mrs. NAPOLITANO. Ms. Taylor?

Ms. TAYLOR. We believe that it is the Federal Government's responsibility to guarantee access to clean water and sanitation. And given that priority, everything else is about best practices, and I have heard the mayor, my colleagues on this end. I have written a million notes. I am going to take all those things back. The bottom line is that our folks are drinking water that is not clean in Detroit and Highland Park, and other places we do not even have dirty water to drink.

So this is the Federal Government's responsibility to find a way to make this happen, and I trust with all of these smart people here, we can do this. We can do this.

Mrs. NAPOLITANO. They need to share best practices.

Ms. TAYLOR. We can share best practices. I am prepared to send over to pick anybody up and bring you to Detroit so we can talk about this. Because we can do this.

Mrs. NAPOLITANO. We can if we all work together.

Ms. TAYLOR. Yes.

Mrs. NAPOLITANO. Ms. Heaps.

Ms. HEAPS. I would echo what my colleagues up here have already said. We need for polluters to be held accountable. We need resources for communities.

Just to answer Mr. Lowenthal's question, I was not asked, but I think 10 years on an NPDES permit is a terrible idea. I would have told Mr. Lynch that in Gardner, Massachusetts, the sewage treatment plant there had its permit expire in 2014, and it still does not have a new permit yet.

So I would say that also Mr. Kricun mentioned we do not know who the good guys and the bad guys are because we have too much turnover in these organizations.

So I would support everything that has been said here and oppose 10-year permit conditions.

Mrs. NAPOLITANO. Well, thank you very much, panel. You have been very enlightening, and it certainly is a pleasure hearing from people who are affected. It is important for us to have those testimonies in the record.

The need for action, the need for more funding, investment in underserved communities, all of us working together can help address the critical issue of water, infrastructure, and potable water.

In closing, I ask unanimous consent that the record of today's hearing remain open until such time as our witnesses have provided answers to any questions to be included in the record of today's hearing.

Without objection, so ordered.

I would like to thank you, witnesses, again. Thank you very much.

I ask unanimous consent that the record remain open for 15 days for any additional comments and information submitted by Members or witnesses to be included in the record of today's hearing.

And Miss González-Colón has information on Puerto Rico she would want us to have included in the record?

Miss GONZÁLEZ-COLÓN. That is correct.

Mrs. NAPOLITANO. So ordered, without objection.

Mrs. NAPOLITANO. I would like to thank you, again, very much. You have been very kind, and it has been a long hearing, but thank you again.

If no other Members have anything to add, our committee stands adjourned.

[Whereupon, at 12:44 p.m., the subcommittee was adjourned.]

SUBMISSIONS FOR THE RECORD

Statement of Hon. Eddie Bernice Johnson, a Representative in Congress from the State of Texas

Thank you, Mr. Chairman.

I am pleased that the Chairman is holding this hearing today, as it allows us to discuss the urgent need for federal investment in order to modernize water infrastructure and make communities more affordable. The CWSRF assists communities by providing low-cost financing for a wide range of wastewater, stormwater, reuse, and other pollution control projects. Recent streamlining of the program provides year-round funding as projects are included in the CWSRF Intended Use Plan. Through Fiscal Year 2018, the program has committed approximately \$8.7 billion for projects across my home state of Texas.

As the world's population continues to grow and urbanize, advanced water treatment and sanitation will be ever more essential. We must get the water equation right if we have any hope of sustaining the world's growing populations and urbanization.

But our water infrastructure doesn't just need funding, it needs reinvention. In our nation, it is no secret that our water infrastructure is struggling to keep up with current demands, much less meet tomorrow's needs. Issues such as the water crisis continuing to plague the city of Flint, Michigan, where children are being poisoned by lead in the water supply, elevate the need for urgent and swift action.

I have been an advocate of water infrastructure by supporting projects such as the Bois d'Arc Lake project—the first major reservoir to be constructed in Texas in 30 years. I continue my support for the U.S. Army Corps of Engineers and their mission of Flood Risk Management and Life Safety in DFW and the surrounding areas. Of note, the Dallas Floodway, which enhances Flood Risk Management for the city of Dallas by raising levy heights and constructing interior pump stations, and the Dallas Floodway Extension, that provides new levies for parts of south Dallas and restores some of our precious wetlands.

I have also supported the U.S. Army Corps of Engineers when a negative article was published about the Lewisville Dam. We worked together as the Corps finished the Dam Safety Modification Study and started the Dam Safety Modification Project. This partnership resulted in a project that started a full two years ahead of schedule and was fully funded.

The reality is that we need to repair, replace, and extend our water infrastructure, and that we need more money to do it, especially at a state and local level. But it's not just a matter of finding the money. We also need to think strategically about what we put the money toward. It is time we target those investments for needs today and tomorrow.

The easy course would be to repair, rebuild, and extend our water infrastructure using the technologies in use today. Engineers know how to design and build it, vendors can make money selling components they're comfortable making, and operators know how to run it. But will it equip us to handle the water needs that communities will face twenty years from now, fifty years from now? That is the question we must address.

Thank you. I yield back.

APPENDIX

QUESTIONS FROM HON. GRACE F. NAPOLITANO FOR HON. DAVID CONDON

Question 1. Your testimony highlights the water and wastewater affordability challenges in communities that I represent. In addition to the integrated planning law and Clean Water State Revolving Fund reauthorization which I have pushed for, I also contend that the Federal government can do more to help individual households address water affordability concerns. I understand that you have personal experience with the Low Income Heating and Energy Assistance Program, or LIHEAP.

In your view, could a similar concept work in addressing low-income household affordability challenges for water and wastewater?

Answer.

- A. The history of federal financial assistance to local government for water and sewer has gone from construction grants (80% Federal, 20% local), to low interest State Revolving Fund (SRF) loans (Cities pay the loans back with interest), to WIFIA credit support (which is also additional long term debt carried by cities). All of these financing mechanisms highlight the Congressional retreat from cities. The question must be asked regarding how does an additional annual appropriation that is greatly uncertain address the fundamental problem with the Clean Water Act regulations and the declining ability of large portions of the population to afford services that comply with a strict set of requirements?
- B. The actual history of a LIHEAP type approach related to residential heating and cooling does not signal that applying it to water and wastewater will provide the needed aid to the right households, or enough households. For example, the LIHEAP programs, as implemented in the states, often rely on a lottery system in an effort to stretch limited resources among a pool of households, so the aid does not get extended to all who need it.
- C. Another concern is that authorizations do not equal appropriations, and the uncertainty of continuous funding provides some members of Congress a sense of having solved the affordability problem by kicking the pay-for can down the road to the appropriators, but ultimately the consumer.
 - a. One east coast city within 100 miles of Washington, DC can serve as an example of how much subsidy is needed in a LIHEAP type program for wastewater to make low income households on par with cost per household for wastewater at no more than 2 percent of actual household income.
 - b. Table 1 examines:
 - i. How 2% Median Household Income (MHI) impacts all income levels in this city; and,
 - ii. The level of subsidy required to limit household wastewater charges to 2 percent of actual household income.
 - c. 2% MHI in this city roughly matches the income group making \$42,500/year. Some 30 percent of Households spend more than 2% of their annual household income for wastewater services: the lowest income group would be required to spend 9.43 percent of their annual income for wastewater services.
 - d. In this case, wastewater charges annually are \$650.
 - e. The annual subsidy required to limit cost per household to 2 percent of actual annual income would cost \$9.7 million.
 - f. Table 2 examines:
 - i. How 4.5% MHI impacts all income levels in this city, (4.5% is related to the EPA expectation that households should spend 2% of their income on wastewater service and 2.5% of income for drinking water); and,
 - ii. The level of subsidy required to limit household wastewater and drinking water charges to 4.5 percent of actual household income.
 - g. 4.5% MHI in this city roughly matches the income group making \$30,000/yr;

- h. Some 30 percent of Households spend more than 4.5% of their annual household income for wastewater services; the lowest income group would be required to spend 13.0 percent of their annual income for wastewater and drinking water services.
 - i. In this case, wastewater and drinking water charges annually are \$1,300.
 - j. The annual subsidy required to limit cost per household to 4.5% percent of actual annual income would cost \$45.8 million.
 - D. In Spokane, LIHEAP energy assistance is available once per heating season per household as long as funding is available. Grants are based on income, heat usage, number of people in the household, and housing type. A family of four needs to make \$30,000 or less to qualify for help. The process to get an appointment is cumbersome, and it can take weeks to get an appointment.
- We believe that affordable rates provides a more equitable and easy way to assist our families. Bureaucratic processes and costs would not be necessary, and more families would receive help.

Question 2. Do you have recommendations on how Congress could create a Federal grant assistance program to address house-hold affordability in a way that provides communities with the flexibility to tailor that assistance to address their unique needs?

Answer. Given the concerns that were just outlined in the answer to question 1, we have no further recommendations regarding creating a Federal grant assistance program that addresses household affordability. We would recommend additional federal assistance to communities to help pay for water infrastructure, particularly in the form of grants either through the SRF process or another means. We would also recommend a robust application of Integrated Planning (IP) for communities facing costly unfunded mandates. Both of these would assist in the bottom line costs to the community so that rates could remain more affordable.

Related to Integrated Planning, we encourage this Congress to be mindful about authorizing new rules and regulations without appropriate funding that will ultimately impose additional costs to citizens that will only exacerbate the current affordability problem.

We recommend Congress to be aware regarding EPA's work on developing a new Financial Capability and Affordability guidance and weigh in if appropriate. This document will be used to determine what communities and citizens can afford to pay and will be used for future regulatory negotiations.

Question 3. As you know, in recent years, the annual appropriations bill for the Clean Water State Revolving Fund (SRF) has carried specific language requiring States to distribute a percentage of their funds to communities, not as traditional loans, but with additional subsidizations (e.g. negative interest loans or principal forgiveness) or grants.

Has this authority provided a benefit to communities to address the local costs of wastewater assistance?

Answer. The simple answer is yes. The problem sometimes is to convince the states to actually implement it. That is why the language Congress chooses is so important. Requiring a state to provide a certain percentage is much better than simply allowing a state to do it.

Question 4. Do you believe this requirement should be made permanent in the Clean Water Act?

Answer. Yes.

Question 5. In the fiscal year 2019 appropriation for the Clean Water SRF, States are required to distribute 10 percent of funds for additional subsidizations (e.g. negative interest loans or principal forgiveness) or grants, and not loans. However, in the Conference of Mayors Priorities for the 116th Congress, the Conference recommends 50 percent of the funds go out as grants and an additional 30 percent be used for no-interest loans.

Can you describe your rationale for this change?

Answer. As mentioned in Answer 1, the Federal government has walked away from its original commitments to water and wastewater infrastructure funding. From the grants of the 1970s, the Federal government has now moved ultimately to loans that communities have to pay back. As a result, local governments are spending 98% of annual investments in municipal water and wastewater infrastructure, including capital as well as operations and maintenance. The last census numbers released for 2016 indicate that local government spent more than \$123 billion for water and wastewater alone. Given the tremendous needs in our communities, many have reached their limits in bonding capacity. Other communities are too small or too disadvantaged to pay these loans back. It would help if Congress would

require more of the money they give to States to be used as negative interest loans and principal forgiveness. By doing this, these loans would, in fact, act like much-needed grants to communities who desperately need them. This would be a positive step by Congress to demonstrate its recommitment to funding water and wastewater infrastructure.

TABLE 1: LEVEL OF SUBSIDY REQUIRED TO MAKE WASTEWATER COST PER HOUSEHOLD AFFORDABLE

| | | Estimated | 2% MHI | | Wastewater | Cost | Subsidy |
|------------------------|-----------|---------------|--------|-----------|------------|-------------|-------------|
| | | Number of | \$943 | 2% | Cost Per | Compared to | Needed for |
| Household | Household | Households HH | HH | HH Income | Household | 2% of HH | Low Income |
| Income | Income | 240,280 | % | \$ | \$650 | Income | HHs |
| Less than \$10,000 | 10,000 | 30,035 | 9.43 | 200 | 450 | 250 | 7,508,750 |
| \$10,000 to \$14,999 | 12,500 | 14,657 | 7.54 | 250 | 400 | 150 | 2,198,562 |
| \$15,000 to \$24,999 | 20,000 | 23,788 | 4.72 | 400 | 250 | -150 | NA |
| \$25,000 to \$34,999 | 30,000 | 25,229 | 3.14 | 600 | 50 | -550 | NA |
| \$35,000 to \$49,999 | 42,500 | 31,477 | 2.22 | 850 | -200 | -1,050 | NA |
| \$50,000 to \$74,999 | 62,500 | 38,445 | 1.51 | 1,250 | -600 | -1,850 | NA |
| \$75,000 to \$99,999 | 87,500 | 23,547 | 1.08 | 1,750 | -1,100 | -2,850 | NA |
| \$100,000 to \$149,999 | 125,000 | 28,113 | 0.75 | 2,500 | -1,850 | -4,350 | NA |
| \$150,000 to \$199,999 | 175,000 | 12,735 | 0.54 | 3,500 | -2,850 | -6,350 | NA |
| \$200,000 or more | 200,000 | 12,014 | 0.47 | 4,000 | -3,350 | -7,350 | NA |
| | | 240,040 | | | | | \$9,707,312 |

TABLE 2: LEVEL OF SUBSIDY REQUIRED TO MAKE WASTEWATER AND DRINKING WATER COST PER HOUSEHOLD AFFORDABLE

| | | Estimated | | Cost Compared to | Cost Compared to | Subsidy |
|---------------------------|-----------------|------------|----------------|------------------------|------------------------|--------------|
| | | Number of | | 4.5% of HH | 4.5% of HH | Needed for |
| Household | Household HH | Households | 4.5 % of HH | Income | Income | Low Income |
| Income | Income | 240,280 | Income | \$1,300 | \$1,300 | HHs |
| Less than \$10,000 | 10,000 | 30,035 | 450.00 | 13.0 | 850.00 | 25,529,750 |
| \$10,000 to \$14,999 | 12,500 | 14,657 | 562.50 | 10.4 | 737.50 | 10,809,597 |
| \$15,000 to \$24,999 | 20,000 | 23,788 | 900.00 | 6.5 | 400.00 | 9,515,088 |
| \$25,000 to \$34,999 | 30,000 | 25,229 | 1,350.0 0 | 4.3 | -50.00 | -1,261,470 |
| \$35,000 to \$49,999 | 42,500 | 31,477 | 1,912.5 0 | 3.1 | -612.50 | -19,279,467 |
| \$50,000 to \$74,999 | 62,500 | 38,445 | 2,812.5 0 | 2.1 | - 1,512.50 | -58,147,760 |
| \$75,000 to \$99,999 | 87,500 | 23,547 | 3,937.5 0 | 1.5 | - 2,637.50 | -62,106,373 |
| \$100,000 to \$149,999 | 125,000 | 28,113 | 5,625.0 0 | 1.0 | - 4,325.00 | -121,587,687 |
| \$150,000 to \$199,999 | 175,000 | 12,735 | 7,875.0 0 | 0.7 | - 6,575.00 | -83,731,573 |
| \$200,000 or more | 200,000 | 12,014 | 9,000.0 0 | 0.7 | - 7,700.00 | -92,507,800 |
| | | 240,040 | | | | \$45,854,435 |

QUESTIONS FROM HON. GRACE F. NAPOLITANO FOR JOHN MOKSZYCKI

Questions 1 and 2. During the hearing, in response to a question about opportunities for the “private sector to bring solutions” to local water quality challenges, you noted that you did not “see how that would work.” You also noted that it was likely that such solutions “are going to be a little more expensive if private entities come into the picture because they need to get paid.”

Can you expand upon this answer?

Can you describe your experiences with private sector companies’ involvement in providing local wastewater services?

Answer. Regarding privatization of water infrastructure and public-private partnerships, NRWA has not opposed water supply privatization in principle. However, corporate water (profit generating companies or companies paying profits to shareholders/investors) should not be eligible for federal taxpayer subsidies. Private com-

panies argue that they have to comply with the same regulations. However, the distinction in mission between public and private is the core principle that should be considered. Public water utilities were and are created to provide for public welfare (the reason why public water continues to expand to underserved and non-profitable populations). Any federal subsidy that is provided to a corporate water utility can't be separated from subsidizing that company's profits.

Regarding private or commercial funding as a source for investment in the country's water infrastructure, please know that there is currently no limitation on private or commercial investments in water utility infrastructure projects. Many water utilities currently rely on commercial or private investors (i.e. a local bank) for certain projects.

However, many water infrastructure water projects would become unaffordable if they were to rely solely on commercial or private financing. This means that the ratepayers would not be able to afford their water bills if the total cost of the project were financed by the ratepayers. This dynamic is especially acute in low-income communities with expensive water utility infrastructure needs.

Congress has determined that there is a federal interest in subsidizing some of these water infrastructure projects based on need—the community's lack of ability to afford the project combined with the public health or environmental urgency of the project. Congress appropriates finite water funding subsidies and communities compete based on need for these limited federal subsidies.

We have concerns with proposals to extend new subsidies or tax preference to the private investment sector to support a new national infrastructure initiative: (1) For private or commercial funding instruments to be able make projects more affordable by lowering interest rates, the federal government would have to offer some type of subsidy or tax-break to the private sector. This will have a cost to the federal government in decreased tax revenue or direct appropriations. If this cost is used to support the private sector it will result in a transfer or circumvention of public (taxpayer) subsidies from the public (local governments under the SRFs, USDA, etc.) to the commercial or corporate sector. We believe that federal water project subsidies should be used for the public/governmental sector water infrastructure projects determined to be a federal priority worthy of public subsidy. (2) Private infrastructure financing does not require the prioritization of projects based on need (economical and environmental) like the current government water programs. It is in the interest of the private financing sector to fund the projects that would have the highest return on investments. Therefore, if additional federal subsidies were used to subsidize the private sector, it would have the effect of redirecting federal subsidies from the projects with the greatest need (economical, public health and environmental) to the projects with least need.

Federal water infrastructure subsidies should only be available to benefit the public—local governments who can't finance water projects on their own, and then the limited federal subsidies should be prioritized to communities in the greatest need. The current federal water infrastructure initiatives including the SRFs and USDA are required by statute to accomplish these public policy objectives and we have not witnessed any new private funding proposals that retain these objectives.

Questions 3 and 4. In recent years, Congress has included a 20 percent set-aside in the Clean Water State Revolving Fund for green infrastructure projects in its annual appropriations bill for this program.

Do you think this authority should be retained, and should it be made permanent?

Has this authority been helpful in assisting local wastewater infrastructure become more resilient and more energy efficient?

Answer. **All U.S. Environmental Protection Agency (EPA) water funding programs should be primarily dedicated to compliance with EPA's federal mandates or standards.** Currently, the Safe Drinking Water Act and Clean Water Act are creating a tremendous financial burden on small and rural communities. The funds provided by Congress, however, are not consistently applied to communities that are experiencing the greatest burden as a result of federal compliance. Communities experiencing economic burden resulting from federal Clean Water Act and Safe Drinking Water Act compliance should be the priority in targeting all EPA water funding subsidies.

Federal water infrastructure subsidies should only be available to benefit the public—local governments who can't finance water projects on their own, and then the limited federal subsidies should be prioritized to communities in the greatest need.

Under the Clean Water Act and the Safe Drinking Water Act, the state revolving funds' (SRFs) application processes require the prioritization of funding awards based on a meritorious needs-based evaluation conducted by the states. Under the

U.S. Department of Agriculture's (USDA) water infrastructure funding program, communities must demonstrate they don't have the ability to obtain commercial credit (the "credit elsewhere" test) and then they are only subsidized by the amount to make the project affordable to that specific community based on a ratio of water rates and local median household income. There are never enough federal subsidies to fund every project.

QUESTIONS FROM HON. GRACE F. NAPOLITANO FOR ANDREW KRICUN, P.E., BCEE

Questions 1 and 2. The Clean Water Act construction grants program and the Clean Water State Revolving Fund (SRF) authorities both have an innovative/alternative program that allowed more favorable financial packages for innovative projects in order to encourage utilities to try new approaches by reducing the associated costs.

Within the context of the Clean Water SRF, how has the green infrastructure/water or energy efficiency improvements/other environmentally innovative activities set-aside, annually extended through the appropriations bills, encouraged utilities to try such innovations?

Have there been any quantifiable benefits of this authority, and if so, please describe?

Answer. The NJ State Revolving Fund includes provisions for principal forgiveness for both green infrastructure projects and for green energy projects. These provisions have been extremely helpful to the Camden County Municipal Utilities Authority. Specifically, we have benefited from the principal forgiveness provisions in the NJ SRF to green over 100 acres in Camden City, capturing 100 million gallons of stormwater, and correspondingly reducing the potential for combined sewage overflows and combined sewage flooding in the streets and homes of Camden residents. In addition, we have leveraged the 100 greened acres and created 240 green internships for at-risk young men and women, aged 17-25, to help maintain and preserve the green infrastructure. None of this could have happened without the State Revolving Fund, and the principal forgiveness component of the Fund was especially helpful.

In addition, the NJ SRF also has provided us with principal forgiveness for our green energy project. This project will enable us to convert our biosolids into electricity and, therefore, be entirely off the electric grid by June 2020, thereby reducing our vulnerability to power outages and severe storms. As a result, our wastewater treatment plant will be able to continue to protect the public health and environment, even if there is a power outage in Camden City. And, we will be able to do this without raising rates to any of our customers. Again, we could never have been able to accomplish this project, without implementing a significant rate increase, if not for the low interest loans offered by the State Revolving Fund. With a median household income of \$26,000, Camden City residents cannot afford rate increases. Yet, I strongly believe that every person in the United States, urban and rural, deserve safe drinking water and protection from sewage overflows and flooding. Thanks to the State Revolving Fund, the Camden County MUA has been able to provide Camden's residents with full clean water service, without raising rates.

Question 3. Should this authority be made permanent, and if so, at what level?

Answer. For these reasons, I strongly recommend that this authority be made permanent. It represents a tremendous opportunity to provide all citizens with innovative environmental solutions, while reducing the risk to the utility trying the innovation, and also, preventing a significant rate burden on the ratepayers.

Question 4. Would you recommend any additional changes to this set-aside to encourage additional innovation?

Answer. My only recommendation would be that if additional funding for these authorities could be made available, it would encourage further replication. In addition, perhaps the innovative uses of the SRF could be more widely documented by EPA and disseminated through the Regions and States, again to encourage replication by other utilities. Most of the innovations that our utility implemented were borrowed and adapted from good ideas from other utilities. Thankfully, our membership in the National Association of Clean Water Agencies (NACWA) gains us access to such innovations. However, there are many smaller cities and towns that are not networked in the same way so I believe that it would be very helpful to these smaller utilities to hear about the SRF-funded innovations that are being implemented in the water sector.

Question 5. During the hearing, there was discussion on how certain small or rural communities lack the resources or personnel to oversee certain utility management responsibilities.

Can you further explain the benefits of peer to peer assistance, regionalization, or public private partnerships in addressing these challenges?

Answer.

- A. *Peer to Peer Initiative*—Most wastewater and drinking water utilities face similar challenges and, in the public sector, at least water practitioners are very willing to share information and experiences with those challenges. It makes no sense for our smallest/ most economically distressed communities to face challenges in silos, especially when solutions are readily available in the sector. I mentioned the advantage of belonging to trade associations like NACWA and the Water Environment Federation (WEF) but there are many "non-networked" utilities and municipalities that do not have access to these water networks.

This is why I strongly believe that a nationwide peer to peer initiative, in which utilities with greater resources assist those non-networked utilities/municipalities with fewer resources. Peer to peer assistance can be provided in a variety of ways, such as knowledge sharing, resource sharing, etc. I am very glad that the USEPA, NACWA and WEF are working together to create a 50-state peer to peer initiative. And, I am very proud that the New Jersey Department of Environmental Protection is taking the lead to pilot the initiative. Thus far, in New Jersey, we already have 13 clean water and drinking water utilities who have volunteered to work with fellow utilities and municipalities who may need help with various challenges, such as applying for the State Revolving Fund, asset management, procurement, technical assistance, etc.

- B. *Regionalization*—Camden County has 37 municipalities, including Camden City. It used to have 53 wastewater treatment plants, all of which were in non-compliance with the Federal Clean Water Act. Camden County created our utility, the Camden County Municipal Utilities Authority, to regionalize wastewater treatment in Camden County. We eliminated all 53 treatment plants, constructed a new wastewater treatment plant, designed to treat all of the sewage flow generated in Camden County to the levels required by the Clean Water Act, and then built a regional sewer system to convey flow from the 37 municipalities to the regional sewage treatment plant. As a result, the interior streams of Camden County were cleaned up almost immediately. Within one year of completion of this project, the fecal coliform (bacteria) levels in these streams dropped by 95 to 99%. In addition, the total cost to ratepayers dropped significantly when the 53 treatment plants were consolidated into one new plant. And, the new regional approach allowed us to provide assistance to Camden City, one of the most economically distressed communities in the United States, so that every citizen in Camden County is getting the benefit of advanced wastewater treatment.

- C. *Public Private Partnerships*—I believe that the ideal set of circumstances, in most cases, is for the public sector utility to adopt the private sector model of efficiency, and then harness that efficiency to the public good. In this way, the public gets the best of both worlds—an efficient utility that has been created for the public good, not for profit.

However, there are several instances where there are opportunities for public-private partnerships, especially in instances where tax incentives that are available to the private sector, but not to the public sector, can be shared by both parties. For example, the Camden County Municipal Utilities Authority entered into a power purchase agreement with a private entity to construct solar panels at our treatment plant. The solar panels provide 1 Megawatt of electricity at a much lower price than the electric company and are also more resilient in the case of a power outage. Because of tax incentives available to the private sector, the private company was able to design, build, own, operate and maintain the panels at NO COST to Camden County, while charging a rate that was over 60% less than the electric company.

On a similar note, we are working with a nearby private operator of trash to steam incinerator to send them clean effluent from our treatment plant, to be used as cooling water in the incinerator, while, in turn, the incinerator will provide our utility with 11 Megawatts of green, resilient, electricity that we will then transmit, through a microgrid, to the most important, vulnerable, infrastructure in Camden City, such as the drinking water plant, hospitals, fire, police, schools, etc.

In summary, while I do believe that an efficient public utility best serves the public, there are definitely opportunities for mutual benefit from public-private partnerships, as evidenced by the examples provided above.

Question 6. On the topic of affordability, several witnesses expressed support for the concept of additional Federal assistance to help local household rate challenges, but urged Congress to provide States and communities with flexibility on how that assistance would be provided.

In your opinion, if Congress were to structure an affordability assistance program within the Clean Water Act, how should it be structured to both provide the flexibility for regional variation, as well as ensure rate relief to low income customers?

Answer. Affordable safe drinking water and clean water services should be provided to all United States citizens, regardless of their zip code. I believe that drinking water and clean water utilities should be allowed, on a permissive, not mandatory, basis, to develop affordability programs that would help them to charge a fair rate to all of their customers, on the basis of the ability to pay. In this way, utilities could charge the rates they need to maintain their infrastructure without the need for Federal and State assistance, without imposing an unsupportable burden on the poorest customers.

I believe that the ability to implement an affordability program is really essential for clean water and drinking water utilities to maintain and upgrade infrastructure as needed to protect the public health and the environment without unduly burdening our most economically distressed citizens. I also believe that, safe drinking water and clean water are essential needs for our citizens, in the same way that heat is during the winter time. Therefore, if the Congress could implement a Low-Income Assistance program for drinking water and clean water customers, that would also help water utilities provide needed services to our customers without unduly burdening our most vulnerable customers.

Question 7. The current and projected impacts of climate change on wastewater and stormwater infrastructure include sea level rise, storm surge, extreme precipitation, decreased water quality, flooding, increased water treatment requirements and costs, and higher energy demand for treatment plants.

How could an increase in Clean Water SRF funding help your community make its infrastructure more resilient to these impacts?

Answer. After Hurricane Sandy in 2013, utilities in New Jersey are very concerned about climate history, and how the climate has already changed beyond the capacity of our infrastructure as it currently stands. If/ As climate change worsens over time, then this infrastructure gap will only worsen correspondingly.

We see three key challenges, and corresponding opportunities, that must be met in the face of climate change:

- green energy projects to reduce the vulnerability of treatment facilities to power outages. During Hurricane Sandy, billions of gallons of raw sewage were discharged into nearby rivers and streams due to power outages and plant failures. It is essential that our nation's water and wastewater treatment plants continue to operate to protect the public health and the environment, even in the face of severe storms and resulting power outages. Also, wastewater treatment plants use 4% of the nation's energy so converting as much of that usage to green energy also helps to reduce carbon footprint as well.
- green infrastructure to reduce the potential for flooding, even in the face of more severe storms. This is especially important in combined sewer areas where extreme storms can lead to raw sewage overflows and flooding into basements, streets and parks
- protection against river level rise is also needed to protect our clean water infrastructure

The State Revolving Fund currently funds all of these types of projects and, as stated above, is a real difference maker, especially for economically distressed communities like Camden City, to be able utilities to be able to construct the infrastructure needed to protect the public health and the environment, while also maintaining affordable rates. As previously mentioned, thanks to the State Revolving Fund, the Camden County Municipal Utilities Authority has undertaken projects that will (1) get our plant off the electric grid by June 2020 and (2) eliminate combined sewage flooding in Camden City, for up to the 1-inch storm by the end of 2020, all without raising rates to our customers. That would have been a complete impossibility without the help of the State Revolving Fund. Because it is a loan program, it is not a hand out, but it is definitely a very significant hand up.

Question 8. What barriers have you experienced in using or trying to use SRF funds to implement green/natural infrastructure projects?

Answer. We have been very lucky in New Jersey in that there have been no barriers to our using SRF funds for green infrastructure projects. My only recommendation is to make sure that there is sufficient funding in our State, and across the United States, to fund all of the green infrastructure projects that are possible. This

is especially true in urban areas like Camden City where the green infrastructure sites are often contaminated, brownfield, sites as well. As long as sufficient funding is available, there is an opportunity for a significant "win-win" to convert brownfield sites, which have environmental and public health impacts, into cleaned green infrastructure sites that provide stormwater benefits and public green space access benefits.

Question 9. Research shows that green or nature-based solutions offer a wide range of social, economic, and environmental advantages that conventional infrastructure does not provide.

Does your community make it a priority to implement green/natural infrastructure as part of its wastewater and stormwater management efforts?

Answer. Yes, the Camden County Municipal Utilities Authority has greened over 100 acres in Camden City in order to reduce combined sewage flooding and overflows. In addition to capturing over 100 million gallons of stormwater, it also provides green amenities to our residents and, as mentioned above, provides opportunities for green jobs to at-risk youth in our community who then maintain the green infrastructure for us, while also receiving full pay and life skills training as well. For all of these reasons, green infrastructure is a very important, necessary, component of our program to control stormwater and combined sewage flooding and overflows in Camden City.

Question 10. What are your thoughts on how we can use natural infrastructure to protect communities and strengthen our overall infrastructure investments?

Answer. For the reasons described above, any community that faces the challenges associated with combined sewer systems should definitely implement green infrastructure as a key component of their stormwater control program. If they do not, then their customers are really missing out on the many social, environmental and economic benefits associated with green infrastructure. This is not to say that grey infrastructure projects should be ignored. On the contrary, it is unlikely that a 100% green infrastructure approach is feasible, due to lack of available space. The optimal solution is a judiciously chosen mixture of green and grey infrastructure, funded with the help of the State Revolving Fund. As previously mentioned, the Camden County Municipal Utilities Authority has been able, thanks to the help of the NJ State Revolving Fund, to implement a program of grey and green infrastructure projects in Camden City which will eliminate combined sewage flooding and overflows, for up to the one-inch storm, by the end of 2020, all without raising rates for our customers.

QUESTIONS FROM HON. GRACE F. NAPOLITANO FOR JILL WITKOWSKI HEAPS

Question 1. In your testimony, you touched on the ways in which the Federal government can assist communities that may not have the means or access to affordable drinking and wastewater services. You suggested that "Congress should create a federal block grant program to directly assist households in paying water and sewer bills" and that it could be modeled off of the Low-Income Home Energy Assistance Program (LIHEAP).

In your opinion, do you believe that it should be a priority for Congress to assist low income individuals and households who may not be able to afford clean water and sewer services—and what do you think is the most effective way to accomplish that?

Answer. Yes, I believe it should be a Congressional priority to ensure that everyone living in the United States of America has clean, safe running water and sanitation in their homes. I think there are several steps to accomplish this effectively.

First, I believe Congress should recognize water as a human right. This can be done in a resolution, in stand-alone legislation, in a preamble to new legislation, or as substantive requirements in new legislation. Although it would be best if it was included in direct legislation, even preamble language can be powerful. The Congressional intent stated in the Clean Water Act has been a powerful tool in protecting and restoring our Nation's waters.

Second, Congress should use existing funding and new funding mechanisms to direct federal funds to address the issue. Increasing both the Clean Water State Revolving Fund (SRF) and Safe Drinking Water SRF will make more funding available for localities to address water infrastructure issues, but that funding is not designed to reach individuals and families in need. New funding sources to help utilities design customer assistance programs can support better systems with equitable and affordable rate structures. A new funding program structured like the Low Income Home Energy Assistance Program (LIHEAP) could direct federal funds to organiza-

tions that directly support families and individuals who need help paying their water and sewer bills.

Most importantly, to truly address our nation's water affordability issues, Congress must prioritize poverty-reduction strategies. The connection between water affordability and poverty was highlighted to me by a participant designing the City of Buffalo's water affordability program, who at one point exclaimed with exasperation: "We can't be responsible for fixing Buffalo's poverty problem!" Utilities alone cannot address poverty issues across the country. For this reason, I urge Congress to support a suite of legislative measures necessary to reduce poverty. These include: (1) raising the minimum wage to a living wage of \$15 per hour, as included in the Raise the Wage Act of 2019, H.R. 582, (2) taking efforts to ensure affordable housing (potentially a rent relief bill, like the Rent Relief Act of 2018), and (3) undertaking national action to make childcare affordable so that parents can afford to work (such as through the Child Care for Working Families Act of 2019, S. 568 or the Universal Child Care and Early Learning Act of 2019).

Question 2. In your testimony, you mention that you serve as vice-chair of the National Environmental Justice Advisory Council, a federal advisory committee to the EPA. I understand you chaired the workgroup which wrote a report "EPA's Role in Addressing the Urgent Water Infrastructure Needs of Environmental Justice Communities."

Has the report been finalized and has EPA released it publicly?

Answer. The National Environmental Justice Advisory Council (NEJAC) report "EPA's Role in Addressing the Urgent Water Infrastructure Needs of Environmental Justice Communities," report has been finalized, but my understanding is that it still being routed to Administrator Wheeler and has not yet been made public.

Question 3. Could you please provide the Committee with a copy of that report?

Answer. It is attached. However, I request that it be kept confidential until Administrator Wheeler has received the report and it is publicly available. I would be happy to inform Subcommittee staff as soon as that occurs.

[The report was provided to the committee, and it is retained in the committee files.]

Question 4. Could you briefly describe the findings of your report?

Answer. The NEJAC recognized that there are significant water infrastructure issues that impact environmental justice communities. The NEJAC recommends that the EPA take action to further eight goals related to drinking water, sewage, and stormwater infrastructure, investment and pollution control. The eight goals are:

1. Change government culture and policies to reflect water is a human right;
2. Request Congress to allocate more funding to help communities with infrastructure building, oversight and public health protection;
3. Promote affordable water and wastewater rates;
4. Prioritize issues in EJ communities;
5. Involve EJ communities meaningfully in infrastructure decision-making;
6. Build community capacity in water systems;
7. Support innovative technologies;
8. Be accountable and rebuild public confidence and trust.

The report continues: "We recognize that EPA currently lacks the resources to carry out fully our recommendations. **For this reason, our primary recommendation calls for the EPA to build a coalition of federal, state, local, and community stakeholders to work collectively on these recommendations. The top priority should be to secure more funding from Congress for clean water infrastructure investments and programs, then allocate them first to environmental justice communities. We believe many of the recommendations outlined here can be acted upon today and such actions should not be delayed.**" (emphasis in original).

The report also recommends that EPA should prioritize the following actions to achieve clean, safe, accessible, and affordable drinking water and sanitation services for all Americans:

- Urge Congress to appropriate more federal funding for water infrastructure grants and loans, prioritizing environmental justice communities;
- Encourage water utilities to diversify funding mechanisms for water infrastructure design and improvement;
- Target meaningful outreach in environmental justice communities;
- Develop policies and protocols with state water quality regulators to ensure that a "Flint crisis" never happens again;

- Conduct detailed infrastructure assessments, especially in vulnerable environmental justice communities;
- Establish a household action level for lead in drinking water;
- Identify inadequate enforcement of the Clean Water Act, Safe Drinking Water Act, and the Lead and Copper Rule where states and local regulators fail to do so;
- Work with federal and state agencies after a disaster to provide immediate potable water in larger quantities to meet emergency needs and maintain public health;
- Encourage and support efforts to build local water system capacity including training operators and sharing best practices; and
- Work directly with residents in environmental justice communities to educate communities about water infrastructure issues.

Question 5. In your testimony, you suggest that Congress “massively increase federal government investment in water infrastructure.” You also note that the current needs assessment is out of date.

In your opinion, at what level should Congress be funding the Clean Water State Revolving Fund?

Answer. In my opinion, Congress should fund the Clean Water SRF at \$6 billion per year. This funding level would restore funding levels to those during the Reagan Administration.

Question 6. How should we go about setting funding levels for the SRF as we move forward?

Answer. The Clean Water Act SRF should be set at a funding level sufficient to support a significant portion of the rising costs of drinking water, sewer, and stormwater infrastructure, particularly at a time when communities are becoming more vulnerable to severe weather, including droughts and floods, that accompany climate change. Congress should rely on biennial need updates from the EPA. EPA should estimate needs based not only on direct input from utilities and municipalities, but also on feedback from academics and organizations such as the American Society of Civil Engineers, the American Water Works Association, the National Association of Clean Water Agencies, the Natural Resources Defense Council, and Earthjustice. EPA’s estimates should be conservative, assuming that water, stormwater, and sewer service providers will underestimate long-term costs or will fail to respond to the survey. Additionally, EPA should offer guidance and assistance to those providing cost estimates to help them understand modifications necessary to their systems to help them become resilient in the face of a changing climate.

Question 7. What do you suggest Congress do in order to get a current assessment of need?

Answer. Congress should clarify to EPA its expectations for receiving cost updates for both clean water and drinking water needs. EPA, in partnership with states, territories and the District of Columbia, conducts the Clean Watersheds Needs Survey every four years.¹ EPA explains on its website, “Congress requires EPA to conduct the [survey] under sections 205(a) and 516 of the Clean Water Act (33 U.S. Code §1375).”²

However, Section 516 of the Clean Water Act mandates EPA “shall make. a detailed estimate, biennially revised, of the cost of construction of all needed publicly owned treatment works in all of the States and of the cost of construction of all needed publicly owned treatment works in each of the States.” 33 U.S.C. § 1375(b)(1)(B). The Act directs that the EPA Administrator “shall submit such detailed estimate and such comprehensive study of such cost to the Congress no later than February 10 of each odd-numbered year.” 33 U.S.C. § 1375(b)(1).

The plain language of the statute directs EPA to submit cost estimates of Clean Water Act compliance for sewage and stormwater discharges every other year. Having frequently updated cost estimates provides Congress with much-needed data in order to make informed decisions about appropriations. I would suggest that Congress ask EPA to explain why it conducts a survey every four years and point out that the most recent numbers provided to Congress were from a 2012 survey.³ I would also suggest that Congress direct EPA to comply with the Clean Water Act’s statutory language requiring detailed estimates to be provided by February 10 of

¹ See “About the Clean Watersheds Needs Survey,” <https://www.epa.gov/cwns/about-clean-watersheds-needs-survey-cwns>.

² Id.

³ The Safe Drinking Water Act requires a needs assessment every four years. 42 U.S.C. §300j-12(h). The 2015 Drinking Water Needs Assessment was submitted to Congress in March 2018.

each odd-numbered year. I understand that providing detailed estimates may be a significant undertaking for the agency. If EPA does not have the current resources to perform the statutory-required biennial estimates, Congress should increase EPA's funding so that the Agency can fulfill its statutory duties.

Question 8. Do you think the amount currently appropriated for the CWSRF is sufficient to help communities incorporate resiliency strategies into their long-term wastewater infrastructure investment plans?

Answer. As recent flooding in Nebraska painfully highlights, much of our current water infrastructure is inadequate to deal with our current climate, let alone predicted increases in severe weather.⁴ While Clean Water SRF funds have been used to build climate-resilient infrastructure, those efforts have been primarily after a storm event devastated a community. For example, Clean Water SRF funds were used to rebuild resilient water infrastructure after Hurricane Sandy. But EPA awarded \$474 million for rebuilding only when emergency funds were appropriated through the Disaster Relief Appropriations Act.⁵

There needs to be a better way to financially support long-term, climate-resilient water infrastructure before disaster strikes. The Natural Resources Defense Council recognizes that our SRFs permit communities to use the funds for projects that promote resiliency and has offered suggestions on how to better use the Clean Water and Safe Drinking Water SRFs to build climate-resilient communities.⁶ Additional appropriations to these SRFs will allow more communities to take advantage of the funds for resiliency purposes.

The reason more communities may not be taking advantage of the SRFs for resiliency is because their engineers may not be incorporating climate change risk management into longterm planning. One issue is that many engineers designing our nation's wastewater systems rely on current engineering practices, which use historic data to design infrastructure (known as stationarity). Further, since the nature of climate science makes it impossible to predict the exact changes that will happen in any given location, engineers have difficulty grappling with the uncertainty. To address these issues, the American Society of Civil Engineers suggests incorporating future climate trends into infrastructure design and adopt low-regret, adaptive approaches.⁷

How much funding do we need to support climate-resilient water systems in all of our communities? A 2010 report from the National Association of Clean Water Agencies estimated the adaptation costs for drinking water and sewage facilities to be between \$448 billion and \$944 billion through 2050.⁸ I have been unable to find EPA estimates of resiliency costs for drinking water, wastewater, and stormwater systems. Neither the 2012 Clean Water Needs Survey results nor the 2015 Drinking Water Needs Survey (results provided to Congress in March 2018) mention the words "climate change," though the Drinking Water Needs Survey provides that some of the projects included in the cost estimate may be needed for resiliency. Further, EPA relies on self-reporting from utilities and communities to compile those estimates. If the engineers communities and utilities relied on for cost estimates are not planning for climate resiliency, those communities and utilities will not have cost estimates for resiliency projects.

In order to understand the magnitude of investment necessary to build climate-change resilient infrastructure, we need to ensure our engineers are incorporating risk-management and resiliency into long-term water planning that addresses not just wastewater infrastructure alone, but our entire water system, including drinking water and stormwater, while also addressing the increasing possibility of flooding and drought. The American Society of Civil Engineers and has resources to assist engineers and utilities in planning for resilient infrastructure,⁹ and EPA has

⁴Grist, "Climate Change is Overwhelming Our Crappy Water Infrastructure," <https://grist.org/article/climate-change-nebraska-flooding-is-overwhelming-our-crappy-water-infrastructure/>.

⁵Clean Water State Revolving Fund, FY 2014 Environmental Benefits Report, https://www.epa.gov/sites/production/files/2015-04/documents/cwsrf_2014_environmental_benefits_report.pdf.

⁶NRDC, "Using State Revolving Funds to Create Climate-Resilient Communities," <https://www.nrdc.org/sites/default/files/state-revolving-funds-IP.pdf>.

⁷American Society of Civil Engineers, "Adapting Infrastructure to a Changing Climate," <https://www.infrastructurereportcard.org/adapting-infrastructure-to-a-changing-climate>.

⁸National Association of Clean Water Agencies, "Confronting Climate Change: An Early Analysis of Water and Wastewater Adaptation Costs," <https://www2.nacwa.org/images/stories/public/2009-10-28creport.pdf>.

⁹See Bilal Ayyub "Climate-Resilient Infrastructure: Adaptive Design and Risk Management," <https://ascelibrary.org/doi/book/10.1061/9780784415191>.

guidance about financing resilient infrastructure.¹⁰ But it will take a shift in the mindset of our engineers to change how they design and plan so we can have a better idea of overall costs of a resilient water system, and it will take a shift in the mindset of utilities and municipalities to be asking engineers for help building resilient systems.

Question 9. During your testimony, you mentioned that the Environmental Protection Agency's clean water needs survey is outdated and may not reflect any needs communities may have to prepare for climate change or to make their infrastructure more resilient.

Do you have any recommendations for Congress to address those needs?

Answer. Based on my comments above, I recommend that Congress should work with EPA and the states to put in place more incentives or even mandates for communities and the technical experts they rely on to put climate change adaptation and resilience as a priority in infrastructure planning.

The Disaster Recovery Reform Act of 2018 was a step in the right direction of supporting resilient infrastructure in our communities.¹¹ That law includes the following sections, which support rebuilding facilities in a more resilient way and also sets aside some pre-disaster mitigation funding:

- *National Public Infrastructure Pre-Disaster Hazard Mitigation (Section 1234):* Authorizes the National Public Infrastructure Pre-Disaster Mitigation fund which will be funded as a 6 percent set aside from disaster expenses, to allow for a greater investment in mitigation before a disaster.
- *Hazard Mitigation Grant Program for Resilience (Section 1235a):* Ensures Hazard Mitigation Grant Program funding increases resilience to future damage, hardship, loss or suffering.
- *Public Assistance 406 Codes and Standards (Section 1235b):* Authorizes FEMA to provide Public Assistance funding to replace and restore disaster damaged facilities to the latest published editions of relevant consensus-based codes and standards to ensure that facilities are restored in a manner that allows them to be resilient.

Another suggestion is for Congress to revisit the utility of separate Clean Water and Safe Drinking Water SRFs. While the funds were initially created in each separate statute to assist with statutory compliance, more and more of our communities are shifting to integrated water planning, addressing drinking water, sewage, and stormwater together. In testimony on March 7, 2019, Mayor Condon and Mr. Andrew Krichun lauded the virtues of integrated water planning. Yet our primary federal mechanism to fund projects developed during integrated planning is still separated into Clean Water and Safe Drinking Water. In a conversation with the City of Buffalo on March 26, 2019, sewer and water officials relayed that because the city has a combined sewer system, they have no trouble accessing Clean Water SRF funds to support priority sewer projects. But the city cannot access Safe Drinking Water SRF funds to prevent problems from existing lead pipes because that process prioritizes funding to communities already in drinking water crisis, leaving no funding left for communities trying to prevent a looming crisis. We need to better support our communities that are planning to avoid or prevent a catastrophe, instead of waiting until systems are devastated by extreme events and only then providing meaningful financial support to rebuild systems.

Question 10. During the hearing, the issue of extending the term of Clean Water Act National Pollutant Discharge Elimination System permits from five to a maximum of ten years was briefly discussed. You mentioned this was a bad idea.

Could you please expand upon that?

Answer. There are several reasons why a ten-year NPDES permit term is a bad idea. Congress considered these reasons when it passed the Clean Water Act. First, the permitting system is the National Pollution Discharge *Elimination* System. The whole purpose of the 5-year permit is to effectuate the technology forcing components of the Act while moving toward the Act's goal of the elimination of discharges of pollutants into our Nation's waterways by 1985. 33 U.S.C. § 1251 (a)(1). We should never retreat from that fundamental principle, nor should we wait for ten years to make technical improvements based on new developments. For example, if we developed a new way to take mercury out of wastewater, extending the time for permits to ten years would mean that it would be over a decade in many cases before the new technology was actually utilized.

¹⁰ EPA's Water Finance Center, "Financing Resilient and Sustainable Water Infrastructure," <https://www.epa.gov/waterfinancecenter/financing-resilient-and-sustainable-water-infrastructure>.

¹¹ <https://www.fema.gov/disaster-recovery-reform-act-2018>.

Similarly, under Clean Water Act Section 303(c), water quality standards are to be revised every three years. A ten-year permit would mean that discharges would generally go many years before they were revised to take into account the new science. In theory permits could be reopened to take advantage of the new standards but in fact, new standards are practically never considered until permits come up.

ADDITIONAL TESTIMONY, PROVIDED IN RESPONSE TO QUESTIONS DURING THE
HEARING OR CLARIFICATION OF MY ORIGINAL TESTIMONY

California's Human Right to Water Law has had a positive impact in California.

Governor Jerry Brown signed AB 685 into law on September 25, 2012. The law establishes that it is the law of the state that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” The law requires state agencies to consider the policy when adopting and implementing regulations.

The law's adoption led to the following actions and changes in California so far:¹²

1. Governor Brown declared a drought state of emergency on January 17, 2014. The Governor sought voluntary conservation and later mandated 25% water use reductions.¹³
2. In April 2014, the State Department of Water Resources released the report, “Californians Without Access to Safe Water and Sanitation” as part of the California Water Plan Update.¹⁴
3. The state transferred oversight of drinking water from the Department of Public Health to the State Water Board on July 1, 2014.
4. In September 2014, Governor Brown signed into law the Sustainable Groundwater Management Act, exercising tighter control over groundwater pumping and quality.¹⁵
5. In November 2014, California voters approved Proposition 1, a \$7.1 billion bond measure for water projects, including funding for poor communities.
6. California law directs the State Water Board to establish the Office of Sustainable Water Solutions to provide technical solutions to communities struggling to provide clean drinking water.¹⁶
7. The State Water Board released a Safe Drinking Water Plan in June 2015.¹⁷
8. In 2015, two important state laws pass. One grants the State Water Board the authority to force failing water utilities to merge with a better-functioning neighboring utility.¹⁸ The other mandates that the State Water Board design and implement a state-wide water affordability program.¹⁹
9. In 2016, the State Water Board adopted a resolution affirming that the human right to water is a “top priority” and a “core value.”²⁰
10. The State Water Board in 2017 unveiled the Human Right to Water portal, a website focusing on drinking water system compliance.²¹

California's Human Right to Water Law is included in its entirety here:

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 106.3 is added to the Water Code, to read:

106.3. (a) It is hereby declared to be the established policy of the state that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.

(b) All relevant state agencies, including the department, the state board, and the State Department of Public Health, shall consider this state policy when re-

¹²See Circle of Blue, “Timeline of California's Human Right to Water,” <https://www.circleofblue.org/2017/world/timeline-california-human-right-water/>.

¹³“Governor Brown Declares Drought State of Emergency,” <https://www.ca.gov/archive/gov39/2014/01/17/news18368/index.html>.

¹⁴https://www.waterboards.ca.gov/centralcoast/water_issues/programs/enviro_justice/ej_docs/2015ca_wo_safewater_san.pdf.

¹⁵“Governor Brown Signs Historic Groundwater Legislation,” <https://www.ca.gov/archive/gov39/2014/09/16/news18701/index.html>.

¹⁶AB 92, http://www.leginfo.ca.gov/pub/15-16/bill/asm/ab_0051-0100/ab_92_bill_20150327_chaptered.htm

¹⁷https://www.waterboards.ca.gov/publications_forms/publications/legislative/docs/2015/sdwp.pdf.

¹⁸SB 88, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB88.

¹⁹AB 401, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB401.

²⁰https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2016/rs2016_0010.pdf

²¹https://www.waterboards.ca.gov/water_issues/programs/hr2w/

vising, adopting, or establishing policies, regulations, and grant criteria when those policies, regulations, and criteria are pertinent to the uses of water described in this section.

(c) This section does not expand any obligation of the state to provide water or to require the expenditure of additional resources to develop water infrastructure beyond the obligations that may exist pursuant to subdivision (b).

(d) This section shall not apply to water supplies for new development.

(e) The implementation of this section shall not infringe on the rights or responsibilities of any public water system.

Spokane, Washington is facing complex pollution issues from legacy PCBs. The fact that compliance with health-based water quality standards is difficult does not mean the standard should be changed.

Mayor Condon of Spokane, Washington shared with the Subcommittee his frustrations over the state of Washington's stringent pollution requirements for PCBs—7 parts per quadrillion—and how that requirement impacts water utilities. However, Mayor Condon's testimony did not explain the scope of the pollution problem in the Spokane River and across Washington, the impact that pollution has on vulnerable communities, and opportunities to use new and emerging technologies to demonstrate compliance with health-based pollution standards.

A. PCB pollution is a significant environmental justice issue in Washington.

Polychlorinated biphenyl (PCBs) are persistent, bioaccumulative carcinogen and endocrine disruptor.²² PCBs were used from 1929 until 1976, when the federal government banned their use under the Toxics Substances Control Act.²³ In the Spokane River, there are a plethora of “legacy” sources of PCBs, including oils, light ballasts, caulking, building materials, transformers, along with inks and dyes.²⁴ PCBs bio-magnify in the aquatic food chain and collect in toxic levels inside the fish that people catch and eat.

The Spokane River is currently listed as “impaired” for PCBs and the Department of Health has issued Fish Consumption Advisories warning people to not eat fish from the Spokane River.²⁵ Fish contamination is a significant environmental justice issue in the Spokane River.²⁶ PCBs occur in nearly every species of fish occurring in the Spokane River basin and pose a threat to anyone who consumes these fish. Alarmingly, these chemical pollutants in the river continue to all but preclude fish consumption on the part of tribal nations downstream.²⁷ Twenty nine treaty tribes of Washington State have been working closely with the EPA to address this issue.

B. Indigenous peoples have historically relied on fish as a staple in their diet. PCB pollution has threatened their way of life.

The Spokane Indian Reservation lies on the Spokane River, downstream of the City of Spokane. Indigenous people fished up and down the Spokane River, on and off current reservation boundaries, and historically consumed nearly 385 grams per day. Because of fish consumption advisories, indigenous fish consumption has dwindled to historic lows, which has devastating effects on the cultural heritage and the health and wellbeing of tribal members. In 2013, the Spokane Tribe promulgated their own water quality standard of 1.3 pg/L in the waters below the city of Spokane to address the PCB contamination issue.²⁸ The EPA has acknowledged that “in Washington, many tribes hold reserved rights to take fish for subsistence, ceremonial, religious, and commercial purposes, including treaty-reserved rights to fish all usual and accustomed fishing grounds and stations in waters under state jurisdiction, which cover the majority of waters in the state.”

In 2016, Washington State approved a Water quality standard based on Human Health Criteria for PCBs that was woefully inadequate. The Human Health Criteria was based on a Fish Consumption Rate of only 6.5 grams of fish per day. Later that same year, the EPA stepped in and promulgated scientifically based, legally defen-

²² U.S. EPA, “Learn about PCBs,” <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>.

²³ Washington State Department of Ecology, “PCBs,” <https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Addressing-priority-toxic-chemicals/PCBs>.

²⁴ *Id.*

²⁵ Washington State Department of Health, “Mobile Fish Advisories,” <https://www.doh.wa.gov/DataandStatisticalReports/HealthDataVisualization/MobileFishAdvisoriesFreshwaterAreasMap>.

²⁶ National Environmental Justice Advisory Council, “Fish Consumption and Environmental Justice,” https://www.epa.gov/sites/production/files/2015-02/documents/fish-consump-report_1102.pdf

²⁷ See Wendee Nicole, “Meeting the Needs of the People: Fish Consumption Rates in the Pacific Northwest,” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3855506/>

²⁸ Spokane Tribe Water Quality Standards, <https://www.epa.gov/sites/production/files/2014-12/documents/spokane-tribe-wqs.pdf>

sible, health-based Water Quality Standard for PCBs that protect the public and tribal fish consumption.²⁹ This new Water Quality Standard was based on a Fish Consumption Rate of 175 grams of fish per day, which is half of traditional consumption levels. This adjusts a water column Water Quality Standard for PCBs of 7 parts per quadrillion.

Mayor Condon stated in his testimony that there is currently no test to detect PCB levels that low. Where current test methods cannot detect those low levels of PCBs, there are two approaches to this issue. First, the utility can demonstrate compliance with the standard by using the most sensitive PCB test available and achieving a “not detect” result. The state could then assume compliance with the standard. Second, the new low standard will then drive innovation, encouraging companies to develop a test now that there is a market to test for ultra-low levels of PCBs. Finally, just because a standard is difficult to achieve does not make it wrong. The whole point of water quality standards is to protect human health, aquatic health, and the uses of our waters. For this reason, Washington’s PCB standards are well-justified and should be maintained.

CLARIFICATION ON THE EXTENT OF THE WATER AFFORDABILITY PROBLEM

In my March 7, 2019 testimony, I referred to a Michigan State University study estimating the number of households likely struggling to pay their bills.³⁰ It has been brought to my attention that there has been some criticism of the methodology used in that study, in particular that the “quantitative and spatial assessments in this study are not well grounded, leaving the dimensions of the ‘burgeoning crisis’ of water affordability proclaimed by the authors still quite hazy.”³¹ Results from a water affordability study published March 8, 2019 “indicate that low-income households must spend an average of 9.7% of their disposable income and/or work 9.5 hours at minimum wage to pay for basic monthly water and sewer service but also that these values vary considerably across the country.”³² This variability means that while in some communities water and sewer rates may be very affordable, in other places water affordability is an urgent problem for many households.

Thank you again for the opportunity to provide testimony on this important issue.

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²⁹ Fact Sheet: Revision of Federal Human Health Criteria Applicable to Washington, https://19january2017snapshot.epa.gov/sites/production/files/2016-11/documents/washington_hhc_final_rule_fact_sheet_508c.pdf.

³⁰ Mack, Elizabeth, Wrase Sarah (2017) “A Burgeoning Crisis? A Nationwide Assessment of the Geography of Water Affordability in the United States.” PLOS ONE <https://doi.org/10.1371/journal.pone.0169488>.

³¹ See Critique by NRDC, <https://journals.plos.org/plosone/article/comment?id=10.1371/annotation/d37f215d-0c6a-43d4-ac39-23bc867c4836>

³² Manuel Teodoro, “Water and sewer affordability in the United States,” AWWA Water Science, March 8, 2019.